Voluntary Environmental Corrective Action Program

Onsite Investigation Report

Prepared for

The Hoover Company

Plant 1, North Canton, OH

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Executive Summary

The Hoover Company (Hoover) has completed the Onsite Investigation at their Plant No. 1 Facility in North Canton, Ohio. The Onsite Investigation is the last of three investigations (Perimeter, Offsite and Onsite) referenced in the Voluntary Corrective Action Agreement signed with the United States Environmental Protection Agency (USEPA; signed in October 1999).

The purpose of the Onsite Investigation was to meet the Corrective Action and Environmental Indicator Objectives of demonstrating that current human exposures are controlled and migration of contaminated groundwater is stabilized through the systematic collection of environmental data in support of remedial actions, where warranted, and to support the identification of areas of no further action within the facility. This report summarizes the results of the Onsite Investigation. Further evaluation of these results is presented in; *The Determination of Human Exposures Environmental Indicators* (HEEI; CH2M HILL, 2000), *Determination of Groundwater Environmental Indicators* (GWEI; CH2M HILL 2001) and *North Yard-Offsite Remedial Alternatives Evaluation Report* (CH2M HILL, 2001).

For the purpose of evaluation, the facility was divided into eight areas referred to as parcels (Site B Parcel, Dogwood Ballfields Parcel, Soccer/Little League Parcel, North Yard Parcel, Site A Parcel, Middle Lots Parcel, Active Facility Parcel and South Lots Parcel). The division into distinct areas was based upon current and historic facility activities and on investigation findings. The parcel specific summaries provided within this report provide the basis for further evaluation and, if warranted remedy design.

Key findings for each of the parcels include:

- Site B Parcel, compounds of interest (COI) detected above target levels (TL correspond to fill areas associated with past waste management practices.
- Dogwood Ballfields Parcel, the few COI detection's above TL are limited to isolated areas within the parcel and do not appear to be related to waste management activities. Soccer/Little League Parcel COI detection's above TL appear to either be related to adjacent parcel activities or represent isolated (sporadic) occurrences resulting from anthropogenic activities rather than past waste management practices.
- North Yard Parcel, COI detection's above TL generally are related to one or more of the solid waste management units (SWMU) that operated in this area.
- Site A Parcel, detection's of COIs above TL are generally related to fill areas associated with past waste management practices.
- Middle Lots Parcel, generally, COI detection's above TL appear adjacent to the industrial sewer.
- Active Facility Parcel, COI detection's above TL appear to be either related to former waste management activities or represent isolated (sporadic) occurrences resulting from anthropogenic activities.
- South Lots Parcel, the few COIs detected above TL do not appear to be related to waste management activities.

As identified in the HEEI and GWEI, no significant threats to human health or the environment exist from past waste management activities at the site given the current land uses of the property. Sampling results within each parcel were compared to target levels (defined in section 2.4) to determine if further evaluation of the sampling results is warranted and if the potential for remediation exists.

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Acronyms

AOC	Area of Concern
COI	Compound of Interest
CVOC	Chlorinated Volatile Organic Compound
DNAPL	dense non-aqueous phase liquid
EI	Environmental Indicator Determination
HEEI	Human Exposures Under Control Environmental Indicator Determination
HHRA	Human Health Risk Assessment
LNAPL	light non-aqueous phase liquid
mgd	Million gallons per day
PAH	Polyaromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TAL	Target Analyte List
TCE	Trichloroethene
TL	Target Level
TSCA	Toxic Substances Control Act
VC	Vinyl Chloride
VECAP	Voluntary Environmental Corrective Action Program
VOC	Volatile Organic Compound

SECTION 1

Introduction

The Hoover Company (Hoover) has completed the Onsite Investigation at their Plant No. 1 Facility in North Canton, Ohio. The Onsite Investigation is the last of three investigations (Perimeter, Offsite and Onsite) referenced in the Voluntary Corrective Action Agreement signed with the United States Environmental Protection Agency (USEPA; signed in October 1999). Table 1-1 lists the major investigations associated with both the Regulated Unit and the VECAP program to date.

TABLE 1-1
Investigations Contributing to Onsite Reporting
The Hoover Company Onsite Investigation Report

Investigation	Time Frame	Reference
Preliminary Drum Storage Area Investigation	July 1988	Preliminary Investigation for Closure of Drum Storage Area, Floyd Brown Associates, Inc., 1988
Drum Storage Area Closure Sampling Report	August 1989	Hazardous Waste Drum Storage Area Closure Sampling Report and Proposed Supplemental Investigation, T. M. Gates, Inc., October 12, 1989
Supplemental Investigation of Former Drum Storage Area	December 1993	Supplemental Investigation Report of Former Drum Storage Area, T. M. Gates, Inc., April 6, 1994
Additional Investigation Activities	October 1994 to January 1995	Amended Closure Plan: Former Hazardous Waste Drum Storage Area, Woodward-Clyde, April 1995
Groundwater Investigation	December 1995 to January 1996	Groundwater Investigation, Woodward-Clyde, January 1997
Documentation of Solid Waste Management Units and Areas of Concern	May to September 1997	Material and Waste Management Areas Inventory, CH2M HILL, November 1997
Geoprobe Investigation to Define Extent of Regulated Unit Contamination	April 1998 to October 1998	Technical Report: RCRA Unit Geoprobe Soil and Groundwater Sampling for the Hoover Company, North Canton, Ohio, CH2M HILL, May 1999
VECAP Perimeter Investigation	November 1999 to February 2000	Perimeter Investigation Report, CH2M HILL, May 2000
VECAP Additional Ballfields Investigation	March 2000	Technical Memorandum: Dogwood Baseball Fields Subsurface Investigation, CH2M HILL, May 2000
VECAP Offsite Investigation	March to July 2000	VECAP Offsite Investigation Report, CH2M HILL, November 2000
VECAP Onsite Investigation	October 2000 to July 2001	

The purpose of the Onsite Investigation was to meet the Corrective Action and Environmental Indicator Objectives of demonstrating that current human exposures are controlled and migration of contaminated groundwater is stabilized through the systematic collection of environmental data in support of any necessary remedial actions and to

identify any areas of no further action within the facility. This report summarizes the Onsite Investigation results for The Hoover Company, Plant 1 in North Canton, Ohio (Hoover). The objectives of the investigation were to:

- Characterize the nature and extent of target level exceedances for compounds of interest (COIs) in soil and groundwater within the facility(target levels are defined in Section 2.4).
- Characterize subsurface geologic and hydrologic factors to better understand physical mechanisms affecting compound migration and to identify migration pathways (soil, groundwater, and utility backfill).
- Identify potential receptors and pathways of exposure to COIs, and assess which are likely to be complete.
- Provide supplemental onsite data to support development of migration control, pathway elimination, or other remedial actions as appropriate. Specifically, develop information to support completion of the Environmental Indicator Determination (EI) and final corrective measures.

The goals of this investigation have been addressed in more than one document. The first two goals are addressed within this text. For the third goal, the reader is directed to the *Determination of Human Exposures Environmental Indicators* (HEEI; CH2M HILL, 2000a), where contaminant and environmental setting information gathered during the investigation supported the selection of appropriate exposure scenarios for risk evaluations. The fourth goal results have been documented in multiple reports:

- *The Determination of Human Exposures Environmental Indicators* (HEEI; CH2M HILL, 2000) and *Determination of Groundwater Environmental Indicators* (GWEI; CH2M HILL, 2001) documents, where conclusions included:
  - There are no unacceptable human exposures to contamination that can be reasonably expected under current land and groundwater use conditions at Hoover Plant 1
  - The migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater."
- An ecological evaluation conducted at the Hoover facility (*Ecological Data Package, Perimeter Investigation Report,* CH2M HILL, 2000) concluded that no further near-term or immediate ecological evaluation activities are warranted.
- Corrective measure alternatives were developed in the *North Yard-Offsite Remedial Alternatives Evaluation Report* (CH2M HILL, 2001) based on the nature and extent of the waste management related chemicals in the subsurface and the interaction of those chemicals in the environment.

1.1 Report Organization

This report is organized into three sections: Introduction, Conceptual Model, and Site Summaries. The introduction provides a brief overview of the investigation's goals and the report organization. The conceptual model includes an overview of the site history, and geologic and hydrologic settings. The site summary includes an overview of sampling results across the site and a summary of eight individual parcels. For the purpose of data evaluation and the evaluation of next steps in the Voluntary Environmental Corrective Action Program (VECAP), the facility was divided into eight parcels. This division into distinct areas was based upon current and historic facility activities and on investigation findings. As part of the site summary, the parcel-specific information has been summarized. These summaries are provided as the basis for further evaluation and, if warranted, remedy design.

SECTION 2

Conceptual Model

2.1 Summary

A conceptual model can be generally described as an understanding of the dynamic interaction of manmade and natural processes. For the VECAP, this understanding focuses on site-related information gathering:

- Identification of waste management areas
- Identification of chemicals that could be related to those waste management areas
- Determination of the presence and possible distribution of chemicals migrating from the managed area into the surrounding environment
- Identification of the environmental setting (including manmade, geologic, and groundwater conditions)
- Evaluation of the chemical behavior (movement and possible breakdown) in the environment

This information was compiled from past records, photographs, site investigations, and available information on chemical behavior and similar environmental settings (*Material and Waste Management Areas Inventory*, CH2M HILL, November 1997; *Perimeter Investigation Report*, CH2M HILL, May 2000; *Technical Memorandum: Dogwood Baseball Fields Subsurface Investigation*, CH2M HILL, May 2000; *VECAP Land Use/Site Development Data Package*, CH2M HILL, July 2000; *VECAP Offsite Investigation Report*, CH2M HILL, November 2000).

Historically, some wastes generated through Hoover's manufacturing processes were managed at the facility in designated areas (Figure 1). Chemicals associated with those wastes can be categorized as:

- Metals (from such sources as machining and paints)
- Polyaromatic hydrocarbons (PAHs; from sources such as coal ash)
- Semi-volatile organic compounds (SVOCS; for plastics softening)
- Volatile organic compounds (VOCs; for uses such as parts cleaning and fuel)
- Polychlorinated biphenyls (PCBs; used in electrical generators)

Through evaluation of data collected during investigation efforts, an understanding was developed regarding the environmental setting and chemical movement within that setting. In general, the chemicals detected during the investigation efforts can readily be placed in two categories:

- Chemicals associated with identified, past waste management areas; or
- Chemicals associated with the manmade or natural environment surrounding the facility.

Another general conclusion that can be drawn from the investigation findings is that the extent and type of waste-related chemicals that have entered the soils and groundwater beneath the facility have been defined and appear to behave in a manner that is both fairly predictable and understood. Specifically, by major chemical category:

- **Metals.** Most metals detected appeared to be related to natural metal content in the local soil and small debris fragments (for example, a copper wire). Limited area(s) may be related to waste management activities. Metals do not readily migrate in the environment unless dissolved from soil into the moving groundwater or through blowing dust. The area is limited in extent (no direct evidence of metals distributed over a larger area by dust) and there is no evidence of significant movement of dissolved metals in groundwater.

- **PAHs.** The distribution and concentration of PAHs at the facility resemble those found in a typical urban setting. Concentrations in soil were compared with urban background concentrations from different literature sources, and were found to be within the ranges stated in the literature (CH2M HILL, 2000a [*Appendix A: Preliminary Risk Evaluation – Recreational Areas at Hoover Plant 1, North Canton, OH* of *RCRA Facility Investigation: Perimeter Investigation Report*]).

- **SVOCs.** Though multiple types of SVOCs were detected during the VECAP investigations, phthalates were the primary group of SVOCs associated with past waste management practices. Bis (2-ethylhexyl) phthalate appears to be the primary phthalate detected and is mainly observed in the Regulated Unit and nearby areas in the North Yard, where it was managed as a waste. Outside the North Yard area, low level, sporadic (i.e., generally individual and isolated) detections of the chemical were noted. The sporadic hits can not be directly attributed to waste management areas and are typically within a range of concentrations that are associated with laboratory or sampling errors.

- **VOCs.** Outside of some sporadic hits, the main group of VOCs detected during the VECAP investigations consisted of chlorinated VOCs (CVOCs). The CVOCs used at the facility included trichloroethene (TCE), tetrachloroethene (PCE), and 1,1,1-trichoroethane (1,1,1-TCA). These chemicals are common metal degreasers and are also known to break down, or degrade, over time. During that degradation process, other CVOCs are created, such as cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichoroethene (1,1-DCE), and vinyl chloride (VC). Outside of some low level sporadic hits, CVOC detections appear to be related to past management practices. CVOCs were primarily detected in the North Yard area and beneath a former degreaser area in the Active Facility. The detections in the former degreaser area appear to be limited in extent, given, in part, to the lack of shallow groundwater to carry the chemical farther away from the release area. The CVOCs in the North Yard did enter the soils in areas of shallow groundwater. Concentrations of the CVOCs were observed in groundwater that migrated from the North Yard. The extent of this migration was found in the mixed commercial and residential area off of Hoover's western property line. In both the former degreaser area and the North Yard, CVOCs were also detected in the underlying bedrock groundwater. Groundwater samples taken from bedrock monitoring wells located in the likely direction of bedrock groundwater flow did not contain detectable

levels of CVOCs. This indicates that the extent of CVOC contamination in the bedrock is likely limited.

- **PCBs.** Along the Hoover maintenance road between North Yard and the Game Patron Parking Lot, as well as in some small localized areas, PCBs were observed at a depth less than 4 feet below ground surface. However, most PCBs were observed at depths below 4 feet below ground surface in the Game Patron Parking Lot and appear to be related to fill locations in that area based on both historic aerial photographs and soil sample results. In general, PCBs do not migrate in the subsurface. They instead tend to sorb onto soils in the area where they were originally deposited. Some groundwater grab samples collected in areas where PCBs were found in soils contained PCBs. It is highly likely that these detections are from PCBs sorbed on the small soil particles in the groundwater grab samples. Monitoring well samples tend to have less soil particles suspended in the groundwater sample and can be more representative of actual groundwater conditions. During the VECAP investigations, PCBs were not detected in groundwater monitoring well samples, which further confirmed the lack of PCB migration.

To provide more details on past practices and the environmental setting at the Hoover Facility, Sections 2.2 and 2.3 further detail current understandings.

2.2 Hoover's Management of Waste Over Time

The Hoover Company began manufacturing electric sweepers at the site around 1908. Before that time, the site housed a tannery and leather goods manufacturing facility. Hoover manufactured electric sweepers, household appliances, and other miscellaneous items for use in World War II and the Korean War.

While the first electric sweepers were assembled from wood, tin, cloth, and horsehair, by 1909 the sweepers were manufactured from aluminum die casts. By 1911, Hoover also began manufacturing the motors to run the sweepers. From the early 1900s until the 1950s, manufacturing operations are believed to have consisted of aluminum die casting (water- and oil-operated), alloying, metal finishing, motor manufacture, plating, painting, and assembly. Based on documentation reviewed during the preliminary review and site inspection and information regarding historic manufacturing processes, the following wastes are known to have been generated at the plant:

- Industrial wastewater
- Caustic enameling wastewater
- Plating sludge (zinc and nickel)
- Wastewater treatment pond sludge
- Enameling pond sludge
- Caustic paint sludge
- Used oil
- Cyanide waste
- Spent solvents
- Paint filters
- Liquid paint waste
- Pyrolysis ash
- Scrap metal
- Plastic scrap
- Laboratory waste
- Incinerator and boiler ash
- Investigation-derived waste containing plasticizer
- General plant trash Construction and demolition debris

Currently, regularly-generated plant wastes consist of process wastewater, plating sludges, used oil, and small quantities of spent solvents. The locations of the historical and current process materials and waste management areas (Figure 1) are known as solid waste management units (SWMUs), areas of concern (AOCs), or the Regulated Unit, and are detailed in the text and in Table 3-1 of the *Material and Waste Management Areas Inventory for Hoover Plant 1* (CH2M HILL, 1997).

2.2.1 Compounds of Interest

With an understanding of the management areas, a list of COI that may be present in the management areas was developed. To assure that the list was complete, additional sampling and analyses were performed to determine if chemicals on USEPA's comprehensive Appendix IX list were present. Prior to the Onsite Investigation and where appropriate, additional compounds detected from the more comprehensive list were added to the COI list. This list provided the basis for a list referred to as the Focused Target Analyte List (TAL) (Table 2-1; *RCRA Facility Investigation, Perimeter Investigation Work Plan,* CH2M HILL, 1999). During the Onsite Investigation periodic samples were also analyzed for the full USEPA Appendix IX list. Compounds that were not detected during the initial phase of the onsite investigation for each area (the objective of which was to characterize each area identified for investigation) were dropped from the TAL for future phases of investigation. As the Onsite Investigation proceeded through three separate phases of data collection, compound specific sampling and analysis was performed to better define the nature and extent of compounds exceeding TL.

TABLE 21
Focused Target Analyte List for VECAP Investigations
The Hoover Company

Compound	Rationale for Inclusion on Target Analyte List
Antimony	Potentially associated with waste streams identified at facility[1]
Arsenic	Potentially associated with waste streams identified at facility[1]
Barium	Detected during previous investigations
Beryllium	Potentially associated with waste streams identified at facility[1]
Cadmium	Detected during previous investigations
Chromium	Detected during previous investigations
Copper	Detected during previous investigations
Cyanide	Potentially associated with waste streams identified at facility[1]
Lead	Detected during previous investigations
Mercury	Potentially associated with waste streams identified at facility[1]
Nickel	Detected during previous investigations
Selenium	Potentially associated with waste streams identified at facility[1]
Vanadium	Potentially associated with waste streams identified at facility[1]
Zinc	Detected during previous investigations

TABLE 21
Focused Target Analyte List for VECAP Investigations
The Hoover Company

Compound	Rationale for Inclusion on Target Analyte List
Polychlorinated biphenyls	Potentially associated with waste streams identified at facility[1]
Acenaphthene	Potentially associated with waste streams identified at facility[1]
Acenaphthylene	Potentially associated with waste streams identified at facility[1]
Anthracene	Potentially associated with waste streams identified at facility[1]
Benzo(a)anthracene	Potentially associated with waste streams identified at facility[1]
Benzo(a)pyrene	Potentially associated with waste streams identified at facility[1]
Benzo(b)fluoranthene	Potentially associated with waste streams identified at facility[1]
Benzo(g,h)perylene	Potentially associated with waste streams identified at facility[1]
Benzo(k)fluoranthene	Potentially associated with waste streams identified at facility[1]
Bis(2-ethylhexyl)phthalate	Detected during previous investigations
Butyl benzyl phthalate	Detected during previous investigations
Chrysene	Potentially associated with waste streams identified at facility[1]
Dibenz(a,h)anthracene	Potentially associated with waste streams identified at facility[1]
Diethyl phthalate	Analyzed during previous investigations
Dimethyl phthalate	Analyzed during previous investigations
Di-n-butyl phthalate	Analyzed during previous investigations
Di-n-octyl phthalate	Analyzed during previous investigations
Fluoranthene	Potentially associated with waste streams identified at facility[1]
Fluorene	Potentially associated with waste streams identified at facility[1]
Indeno(1,2,3-cd)pyrene	Potentially associated with waste streams identified at facility[1]
Naphthalene	Potentially associated with waste streams identified at facility[1]
Phenanthrene	Potentially associated with waste streams identified at facility[1]
Pyrene	Potentially associated with waste streams identified at facility[1]
Pyridine	Potentially associated with waste streams identified at facility[1]
1,1,1-Trichloroethane	Detected during previous investigations
1,1,2-Trichloroethane	Potentially associated with waste streams identified at facility[1]
1,1-Dichloroethane	Detected during previous investigations
1,1-Dichloroethene	Detected during previous investigations
1,2-Dichlorobenzene	Potentially associated with waste streams identified at facility[1]
1,2-Dichloroethane	Analyzed during previous investigations
4-Methyl-2-pentanone	Analyzed during previous investigations

TABLE 21
Focused Target Analyte List for VECAP Investigations
The Hoover Company

Compound	Rationale for Inclusion on Target Analyte List
Benzene	Analyzed during previous investigations
Carbon disulfide	Potentially associated with waste streams identified at facility[1]
Carbon tetrachloride	Potentially associated with waste streams identified at facility[1]
Chlorobenzene	Potentially associated with waste streams identified at facility[1]
Chloroform	Potentially associated with waste streams identified at facility[1]
Cis-1,2-Dichloroethylene	Detected during previous investigations
Dichlorodifluoromethane	Potentially associated with waste streams identified at facility[1]
Ethylbenzene	Detected during previous investigations
Isobutyl alcohol	Potentially associated with waste streams identified at facility[1]
Methyl ethyl ketone	Detected during previous investigations
Methylene chloride	Potentially associated with waste streams identified at facility[1]
Styrene	Potentially associated with waste streams identified at facility[1]
Tetrachloroethene	Detected during previous investigations
Toluene	Detected during previous investigations
Trans-1,2-Dichloroethene	Potentially associated with waste streams identified at facility[1]
Trichloroethene	Detected during previous investigations
Trichlorofluoromethane	Potentially associated with waste streams identified at facility[1]
Vinyl chloride	Potential degradation product of chlorinated solvents
Xylenes	Detected during previous investigations

Historical records of wastes managed at the Facility provided information on generic waste categories as oppose to specific chemicals. These constituents were included to be conservative and are typical for the given manufacturing processes.

2.3 Physical Conditions/Setting

2.3.1 Land Use and Surface Cover

Land use changes in the approximately 87-acre site can be seen on the historical aerial photographs (*VECAP Land Use/Site Development Data Package,* CH2M HILL, July 2000). In 1934, most of the northern and southern ends of the facility were agricultural or undeveloped while the central third was manufacturing and residential (Figure 2). There was, however, a gas well in the northern part of the site and multiple oil/gas drilling and coal-mining operations were near the site in the surrounding areas. By 1966, site-associated activities had extended to the northeastern corner of the site and the southern end was transformed into parking areas for manufacturing activities, while the manufacturing and

process areas expanded in the middle section (Figure 3). In January 2000, all but the northern end of the facility was used for manufacturing, distribution, and employee parking. This northern area was used for public athletic activities (Figure 4). The surrounding area is presently used for a wide variety of purposes, including residential, commercial, and public use (Figure 5).

Both the Hoover property and the surrounding areas have a variety of surface cover types, allowing a range of precipitation infiltration into the subsurface soil. Within the Hoover property boundaries (Figure 6), approximately 35 percent of the surface cover is impermeable (buildings or concrete/asphalt pavement), 25 percent is semi-permeable (chip and seal pavement or gravel), and 40 percent is considered permeable (grass or dirt).

2.3.2 Geologic Setting

The surface topography of the region surrounding North Canton, Ohio, is characterized by a series of north-south oriented ridge forms separated by relatively flat valleys. The City of North Canton is at the top of the southern end of one of these ridges, between two forks of the West Branch of the Nimishillen Creek, draining the adjacent valleys toward the south (Figure 7). As can be seen on Figure 7, the two forks of the Nimishillen Creek are the closest surface water bodies to the site in the center of North Canton, with the exception of the man-made wastewater treatment ponds within the site boundaries (see Figure 8). The ground surface topography within the site boundaries (Figure 8) is relatively flat, with a topographic high oriented southwest-northeast across the Main Plant Area (Active Facility) and the soccer field with a minor high oriented northwest-southeast from the soccer field to the northwest corner of the Dogwood Ballfields. The ground surface slopes downward off of these highs to the west across most of the northern half of the site, to the northeast in the northeast corner of the site, and to the southeast in the southeast part of the site along the head of a drainage valley leading off of the regional high.

2.3.3 Unconsolidated Geology

The loose surface and shallow subsurface soil material (5 to 100 feet thick) encountered at the site and in surrounding areas is generally referred to as unconsolidated material. The majority of this material was deposited by glaciers (till) or in a post-glacial environment (meltwater streams, debris flows, etc.). All unconsolidated material has been grouped into one of four units:

- **Coarse-grained unit.** Sand, gravel, or both constitute 95 percent or more of the soil volume.
- **Coarse-grained unit with fine material.** Sand, gravel, or both constitute 50 percent or more of the soil volume.
- **Fine-grained unit**. At least 50-percent fine-grained material (silt or clay) is present by volume.
- **Fill material.** Consists of non-native material, such as construction debris, engineered fill, industrial fill, and road base. Fill was mainly encountered in perimeter and onsite locations.

Figure 9 shows the locations of cross sections illustrating the subsurface geology in and around Hoover's Plant 1 facility. Figure 10 is a north-south oriented cross section on the western edge of the property boundary, and Figure 11 is a west-east oriented cross section along Viking Avenue immediately west of Hoover and cutting across the center of the property. The presence of coarse-grained units generally increases away from the ground surface elevation highs, where the total thickness of the unconsolidated glacial deposits increases with the sharper drop in bedrock surface elevation toward the valleys. Beneath the existing and proposed City of North Canton groundwater wellfields in the centers of the two valleys straddling North Canton (see Figure 9), the unconsolidated glacial deposits are nearly 100 percent coarse-grained sand and gravel material. As shown in Figure 12, these deposits are upwards of 100 feet thick.

2.3.4 Bedrock Geology

The unconsolidated glacial deposits are underlain by bedrock, which consists of thin interbedded layers of shale, limestone, coal, sandstone, and siltstone. These layers are laterally discontinuous at the higher elevations observed under the Hoover facility. Figure 12 shows a generalized west-east bedrock geologic cross section. The regional dip of the bedrock units is slightly sloping to the southeast, whereas at the site, the bedrock units appear virtually flat. Within a geologic timeframe, this relatively flat bedrock surface has been carved through glacial migration and surface water movement. These processes resulted in a bedrock surface elevation high located under the eastern part of the facility that drops towards the west, south, and east to the buried valleys beneath the branches of the Nimishillen Creek (see Figure 13). The bedrock is moderately fractured in the upper zones, but fractures tend to decrease with depth.

2.3.5 Precipitation/Infiltration

The average annual precipitation, including snowmelt, for the Akron/Canton region is 41.8 inches per year. The seasonal variation shows an increase in precipitation throughout the year from winter through summer, then a decline into fall. The interaction between precipitation and groundwater elevation on Chart 1 indicates a quick groundwater response in MW-15S and MW-15D to the infiltration of precipitation at the north end of the site in spring 2001, with increases in groundwater elevation following sharp increases in precipitation in less than 1 day.

2.3.6 Groundwater

Fluctuations in the unconsolidated groundwater potentiometric surface are evident in the sitewide water levels collected on a quarterly basis (consistently collected in February, May, August, and November of each year since 1998). Differences in the groundwater elevation at any one monitoring location from one quarter to the next can be as great as 2 to 3 feet, with the greatest differences typically occurring in the monitoring locations at the groundwater elevation high (PZ-6, PZ-7, and MW-22S), and little to no differences in the downgradient monitoring locations. While the elevations, and therefore the magnitude of the gradient, change quarterly, the local gradient directions remain consistent (to the northeast in the northeast corner of the site, to the west-northwest in the rest of the northern half of the site, and to the southeast in the southeast corner of the site).

The presence of building basements and other subsurface structures, such as sewer lines, could alter the flow pattern of groundwater and therefore the flow pattern of contaminants in the groundwater. Figure 14 shows the unconsolidated groundwater contours in the area around the Regulated Unit. While the overall direction of the groundwater gradient across the North Yard is to the northwest, the higher groundwater elevation to the west of Building 30 compared to the groundwater elevation east of Building 30 creates a local gradient to the northeast. In this case, the basement beneath Building 30 and the floor slab of Building 36 could be trapping groundwater in the space between, creating the elevated groundwater level between the buildings.

The average rate of groundwater movement in the North Yard parcel is estimated at 9.2 feet/day (the range of calculated velocities is between 0.04 and 23.5 feet/day). This rate is based on data previously collected regarding the hydraulic conductivity as measured during aquifer slug testing in MW-1 through MW-12 and the gradient magnitude across those wells (*RCRA Unit Geoprobe Soil and Groundwater Sampling for The Hoover Company, North Canton, Ohio,* CH2M HILL, May 1999). Additional aquifer slug tests performed during the VECAP perimeter investigation yielded average groundwater flow velocities of 2.0 feet/day on the western perimeter of the site and 0.8 feet/day on the northern perimeter of the site (*The Hoover Company Perimeter Investigation - Groundwater Discharge and Flow Velocity Estimate Summary* technical memorandum, CH2M HILL April 2000). Results of more extensive aquifer testing (pump tests) conducted during the Offsite Investigation yielded higher average calculated velocities of between 15 feet/day at MW-18S and 62 feet/day at MW-17S (*The Hoover Company Offsite Investigation – Draft Pump Test Analysis Summary* technical memorandum, CH2M HILL, November 2000).

Known registered groundwater users within a 2-mile-radius of the Regulated Unit at the center of the Hoover property are listed in Table 2-2. The nearest public water supply wells are about 4,700 feet north of the Regulated Unit, or about 3,400 feet from the plant boundary. These production wells (Applegrove Water Company) are 400 feet deep and screened in limestone from either the Sharon Conglomerate or the Massillon Sandstone.

TABLE 22
Registered Groundwater Users within a 2-Mile Radius of Regulated Unit
The Hoover Company

Registered Groundwater User	WaterUse	Capacity (mgd)	Approximate Distance/Direction from Regulated Unit (ft)	Depth of Well (ft)	Geologic Unt
Applegrove Water Company	Public water supply	1.41	4,700/ north	400	Limestone
Village of North Canton	Public water supply	7.0	5,300/ west	86–397	Sand and gravel; shale, sandstone
Proposed Village of North Canton	Public water supply	Not determined	5,300/ east	Not determined	Proposed Sand and gravel; Possibly shale, sandstone
Rentwear	Industrial process water	0.5	10,000/ northwest	300	Shale

TABLE 22
Registered Groundwater Users within a 2-Mile Radius of Regulated Unit
The Hoover Company

Registered Groundwater User	WaterUse	Capacity (mgd)	Approximate Distance/Direction from Regulated Unit (ft)	Depth of Well (ft)	Geologic Unt
City of Canton	Public water supply	9.9	10,000/ southwest	80–120	Sand and gravel

Bob-O-Link Golf Course (4,200 feet from Regulated Unit) uses water from a reservoir for seasonal surface irrigation.
mgd = million gallons per day

It is unlikely that there is a direct connection between unconsolidated glacial aquifer at the Hoover facility and the nearest high-capacity wells. The production wells are screened-in units encountered far below the affected area, beneath a potential confining unit, or several thousands of feet away. Therefore, groundwater users are not likely to be affected by conditions associated with Plant 1.

Regional groundwater flow is characterized primarily by the flow within the buried valley aquifers (Figure 13), where the 100-foot-thick sand and gravel units within the bedrock-surface troughs transmit water more readily than the more clay-rich glacial units on the bedrock surface elevation highs. The Hoover facility is situated at the top of a bedrock and ground surface high, and groundwater in the unconsolidated glacial units beneath the site flows away from the extreme local highs in the direction of the valleys (Figure 15). Both the existing and proposed wellfields of the City of North Canton are located within the buried valley aquifers (and also draw some groundwater from the underlying sandstone bedrock units) and numerous private water wells are also installed in the buried valley east of the Hoover facility.

There is a measured downward vertical gradient from the unconsolidated groundwater to the bedrock groundwater zone(s) at the site. The magnitude of this vertical gradient appears highest in areas of bedrock surface elevation highs (around main plant buildings) but decreases away from the bedrock highs. At points off the site property, the vertical gradient may become negligible, resulting in either no downward groundwater migration or possible upward migration (discharge into the overlying unconsolidated deposits). The bedrock is moderately fractured in the upper zones but fractures tend to decrease in lower zones. This suggests the potential for flow from the overburden to the bedrock through vertically-oriented fractures within shallow bedrock units. However, given the flat-lying units and fracture zones decreasing with depth, groundwater is anticipated to preferentially move laterally along bedding planes as shown in Figure 16 (*Documentation of Environmental Indicator Determination: Migration of Contaminated Groundwater Under Control,* CH2M HILL, 2001).

Along the north half of the site, bedrock groundwater flow is generally to the northwest (Figure 17). Along the bedrock high (south part of facility), there appears to be a groundwater flow component to the southeast. This sitewide bedrock groundwater flow pattern resembles that of the unconsolidated glacial groundwater flow pattern onsite.

2.4 Interaction of Waste Management and Physical Setting

The COIs on the TAL developed from the process material and waste list are grouped by class (Table 2-3). Target levels (TLs), or screening values, for these compounds were determined based on risk factors, and can be found in Table 1 of the *Facility-Specific Target Levels – Hoover Voluntary Corrective Action Program* memorandum (Satrape, February 2000). Comparisons of analytical results to target levels will be used to determine whether . areas within the facility warrant further evaluation to determine if there are potential risks to human health or the environment and or warrant remediation. As noted, the target levels presented in this document will not be used to define overall risk for human or ecological receptors at the facility, nor are they intended for use as media cleanup levels. However, they will be used to identify the need for additional corrective action activities (additional investigations, evaluation of remedial alternatives, site-specific risk assessments).

TABLE 23
TAL COIs by Group
The Hoover Company

Semivolatile Organic Compounds (SVOCs)			
Acenaphthene	Benzo(g,h)perylene	Diethyl phthalate	Indeno(1,2,3-cd)pyrene
Acenaphthylene	Benzo(k)fluoranthene	Dimethyl phthalate	Naphthalene
Anthracene	Bis(2-ethylhexyl)phthalate	Di-n-butyl phthalate	Phenanthrene
Benzo(a)anthracene	Butyl benzyl phthalate	Di-n-octyl phthalate	Pyrene
Benzo(a)pyrene	Chrysene	Fluoranthene	Pyridine
Benzo(b)fluoranthene	Dibenz(a,h)anthracene	Fluorene	
Polychlorinated Biphenols (PCBs)			
Arochlor-1016	Arochlor-1232	Arochlor-1248	Arochlor-1260
Arochlor-1221	Arochlor-1242	Arochlor-1254	
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	Benzene	Dichlorodifluoromethane	Toluene
1,1,2-Trichloroethane	Butyl alcohol	Ethylbenzene	Trans-1,2-Dichloroethylene
1,1-Dichloroethane	Carbon disulfide	Isobutyl alcohol	Trichloroethylene
1,1-Dichloroethylene	Carbon tetrachloride	Methyl ethyl ketone	Trichlorofluoromethane
1,2-Dichlorobenzene	Chlorobenzene	Methylene chloride	Vinyl chloride
1,2-Dichloroethane	Chloroform	Tetrachloroethylene	Xylenes
4-Methyl-2-pentanone	Cis-1,2-Dichloroethylene		
Metals (and Inorganics)			
Barium	Copper	Mercury	Vanadium
Cadmium	Cyanide	Nickel	Zinc
Chromium	Lead	Titanium	

Since the initial investigations of the Former Drum Storage Area (Regulated Unit) in the late 1980s, nearly 500 soil, groundwater, and sewer sampling and monitoring locations have been installed within and around the Hoover site (Figure 18). As can be seen in Figure 19, many of these locations overlap or are near the footprints of the SWMUs and AOCs and will be used to delineate the contamination in soil and groundwater resulting from the various process materials and wastes used and/or stored in these areas.

During the investigations, the sampling techniques employed, such as low-flow sampling method, provided adequate reliability that non-aqueous phase liquids (sometimes referred to as free product) could be detected. Given that many sampling locations were located in areas where free product could be present, special care was taken to minimize and where possible, eliminate potential for free product to effect other portions of the groundwater system in the soil boring location. During the field effort, the presence of light non-aqueous phase liquid (LNAPL) was visibly detected in the field. Examples of compounds that could be observed as a LNAPL, if they are present in a free product form, include plastisizers

(phthalates). Some compounds are heavier than water and can sink through soil or groundwater; these are referred to as dense non-aqueous phase liquids (DNAPLs). Examples of DNAPLs that could be observed, if they are present in a free product form, include chlorinated volatile organic compounds (such as metal degreasers). DNAPLs were not observed in groundwater or soil samples collected at the facility. However, the type, nature, and concentration of compounds that were observed in groundwater and soil at the facility indicate that DNAPLs may be present in limited locations under the facility. Figure 20 shows a conceptual cross section of the migration of contamination from the surface sources into soil, groundwater, and air (soil vapor). The different chemical groups in Table 2-3 will migrate away from the source areas through the subsurface at different rates, dependent upon the compounds' affinity to groundwater and/or organic matter in the soil, its degradation rate, the soil's porosity, and soil permeability. The PCBs, metals, and SVOCs move slowly, if at all, through the subsurface, and VOCs tend to move through the subsurface at a rate slower than groundwater velocities. VOCs naturally degrade through reductive dehalogenation: PCE degrades into TCE, which degrades into cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE) or 1,1-dichloroethane (1,1-DCA), which degrades into VC (Figure 21). The presence or absence of parameters associated with aerobic, anaerobic, and/or bio-degradation potential for CVOCs at the Hoover facility indicates that the contaminant plume east of North Main Street (onsite) is under anaerobic conditions, while the contaminant plume west of North Main Street is under aerobic conditions (*North Yard-Offsite Remedial Alternatives Evaluation Report*, CH2M HILL, 2001).

During the Hoover perimeter investigation, some metals (arsenic, beryllium, cadmium, copper, lead, tin, and titanium) were detected at concentrations above facility-specific TLs in soil and groundwater. However, further evaluation of the data, presented in the *Technical Memorandum: Evaluation of Metals in Soil and Groundwater at the Hoover Facility* (CH2M HILL DRAFT, September 2001), indicates that the presence of these compounds above TLs does not necessarily indicate that metals have been released from materials handling or waste management activities at the Hoover facility. The result of qualitative evaluation on the metal detections concluded that no further evaluation is required for arsenic, beryllium, cadmium, copper, lead, tin, and total metals in groundwater based on the rationale listed below:

- All metal detections are not related to waste management activities and are likely to be sporadic and incidental, caused by the presence of wire, paint, or debris rather than waste releases.
- Beryllium detections are below risk-based TL, based on the most current risk assessment information.
- Elevated concentrations of total metal from groundwater grab samples are likely a result of suspended solids present in groundwater.

Dissolved metals in groundwater will be further evaluated in the appropriate parcel-specific risk assessments.

SECTION 3

Introduction to Parcels

3.1 Definition

The definition of the parcel boundaries is based on current and former land use and waste management activities (Figure 22). The following parcel-specific summaries focus on onsite investigation areas and do not cover offsite sampling locations outside of the parcel boundaries (*see Offsite Investigation Report*, November 2000, for excluded areas).

3.2 Background

Investigations performed to date are summarized in Table 1-1 of the Introduction. Figures 23 through 28 show the distribution of sampling locations for all six sample types collected during the investigations: surface soil (Figure 23), subsurface soil (Figure 24), unconsolidated glacial groundwater (Figure 25), bedrock groundwater (Figure 26), soil vapor/air (Figure 27), and sewers/sumps (Figure 28).

3.3 Key Findings by Parcel

The following sections provide key findings of the above parcel investigations. Appendix A includes Onsite Investigation soil and groundwater detections above TLs. Appendix B includes parcel data maps with data locations outside of the parcel boundaries to provide comprehensive data summaries. Parcel investigations were developed based on the waste management history and results from previous investigations.

Future documents will be developed that will provide additional information regarding the interpretation of data as it pertains to future VECAP activities. In general, the results from these investigations have identified CVOCs in soil and groundwater, PCBs in soil, and in limited areas, bis(2-ethylhexyl)phthalate in soil as constituents warranting further consideration in the VECAP. Other COIs, such as metals and PAHs, have been detected in soil and groundwater at concentrations above facility-specific TLs.[1] However, in many areas of the facility, the occurrence of these compounds in soil or groundwater is unlikely to have been associated with releases from materials handling or waste management, based on evaluation of the analytical results combined with review of historical land uses and waste management practices. Occurrence of metals in groundwater is likely to reflect naturally occurring levels, in the absence of significant source concentrations in soil. Metals and PAHs in these areas do not warrant further consideration in the VECAP.

[1] The PAHs detected at concentrations higher than TLs generally were high-molecular weight compounds, including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and chrysene. The TLs for these constituents are generally close the limits of detection. Therefore, it is possible for anthropogenic levels (i.e., associated with common human activities) in soil to be higher than these TLs.

3.3.1 Site B Parcel

3.3.1.1 Definition

The location and approximate size of the Site B parcel was estimated from information provided in Hoover's *CERCLA Certification Regarding Potential Releases from Solid Waste Management Units* (March 14, 1986), and refined through the use of aerial photographs. The Site B parcel was used as a waste disposal area from roughly 1948 until 1968 and the area was converted to a parking lot sometime between 1969 and 1972. Based on investigation findings, the north-south maintenance road connecting Site B to the North Yard area is discussed with this parcel (Figure 29).

3.3.1.2 Parcel Investigation Summary

Site B investigation activities have occurred as part of the perimeter, ballfields, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Site B parcel were initially analyzed for the TAL and, in limited locations, Appendix IX, which included VOCs, PAHs, phthalates, metals, and PCBs, with subsequent investigations focusing on PCBs as the primary COI.

A summary of COI detections in soils and groundwater is provided in Appendix A Tables A-1 and A-2 and Figures B-1 through B-6.

3.3.1.3 Key Findings

Aerial photographs and existing records indicate that dredged sludges from the wastewater treatment ponds were placed in the Site B parcel from approximately 1948 through 1968. Generally, COI detections above TL at this parcel correspond to these fill areas associated with past waste management practices.

VOCs. Two VOCs (total xylenes and 2-butanone) were detected above TL in soils at the Site B parcel northern boundary at depths of between 2 to 6 feet below ground surface. These detections are located in areas associated with fill material. Other VOCs were either not detected or were not present above TL in the surrounding soils.

One VOC, VC, was detected above TL in groundwater at two isolated locations in the Site B parcel. Detected just above TL, the isolated occurrences of VC were present in groundwater samples collected at both the SB-110/MW-13 and SB-220 locations. Chlorinated solvents were either not detected or were not present above TL in surrounding soils or downgradient in groundwater.

PAHs. PAHs were detected above TL in the soils and groundwater of isolated areas in the Site B parcel, in samples from areas with fill materials that are associated with past waste management practices. These PAH concentrations are at or near anthropogenic background levels that are likely to be unrelated to potential releases from facility activities.

Phthalates. Bis(2-ethylhexyl)phthalate was detected above TL at one soil location, SB-108, on the northern parcel boundary. Blue plastic shards were observed this boring. Bis(2-ethylhexyl)phthalate was detected at 4 to 6 feet below ground surface and is likely associated with fill materials (shards) associated with past waste management practices. Phthalates were not detected above TL in groundwater.

Metals. Arsenic, lead, cadmium and chromium were detected above TL in the soils of five isolated areas at the Site B parcel. These locations correspond to fill areas associated with past waste management practices. The occurrence of lead cadmium and chromium is sporadic, suggesting that these elevated concentrations are associated with metals debris pieces, and do not represent contaminated soil. Evaluation of the distribution of arsenic concentrations indicates that arsenic on a site-wide basis reflects naturally-occurring levels in soil. Metals were not detected above TL in groundwater samples at the parcel.

PCBs. PCBs were detected above TL in soils at several locations at depths of up to 9 feet below ground surface. PCB contamination at these locations, present at concentrations up to 430,000 ppb, appears to be related to fill areas associated with past waste management practices (Figure 30). The extent of fill in Site B, shown on Figure 31 (Site B cross section), was delineated by evaluation of historical aerial photographs as well as soil boring log data.

Soil PCB contamination is also present at some locations at the surface (typically 0 to 4 feet below ground surface). These surface detections are limited to roadways in the Site B parcel, including the north-south maintenance roadway connecting Site B to the North Yard area.

PCBs were detected above TL at two locations where groundwater grab samples were collected at the parcel. This is expected given that PCBs sorb to soil particles, and the groundwater samples contained some suspended solids (sample SB-108 contained 26 mg/L suspended solids). PCBs were not detected in groundwater samples collected from monitoring wells.

3.3.2 Dogwood Ballfields Parcel

3.3.2.1 Definition

The Dogwoods Ballfields parcel is defined as the area of the ballfields that lies outside the Site B parcel boundary (Figure 32).

3.3.2.2 Parcel Investigation Summary

Dogwood Ballfields investigation activities have occurred as part of the perimeter, ballfields, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Dogwood Ballfields parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs. TCE, lead, and PCBs have been evaluated further in this area. A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2, and Figures B-1 through B-6 (shown on Site B parcel figures).

3.3.2.3 Key Findings

Aerial photographs, historic land use information, and other existing records indicate that no known waste management activities occurred in this area. The few COI detections above TL are limited to isolated areas within this parcel and do not appear to be related to waste management activities.

VOCs. TCE was sporadically detected above TL in surface soils in isolated areas.

One VOC, VC, was detected above TL in groundwater at the Dogwood Ballfields parcel. VC was detected just above TL at three isolated locations. Other chlorinated VOCs were either not

detected or were not present above TL in surrounding soils or downgradient in groundwater. VC is one of the last breakdown products for chlorinated VOCs.

PAHs. PAHs were sporadically detected above TL in soils and groundwater. PAHs in soil are present at relatively low levels that appear to reflect anthropogenic background (i.e., cinders or traces of asphalt material), and therefore likely to be unrelated to facility activities (HEEI, CH2M HILL 2000). PAHs in groundwater may be related to the occurrence of PAHs in suspended sediment in water samples.

Phthalates. Phthalates were not detected in soils or groundwater above TL.

Metals. Arsenic, lead, and beryllium were sporadically detected in soils in isolated areas above TL. These detections are likely related to natural metal content in soil.

Total nickel was detected above TL in one monitoring well sample from MW-15S. Titanium was detected above TL in one dissolved groundwater sample collected at perimeter boring SB-119.

PCBs. PCBs were not detected in soils or groundwater above TL.

3.3.3 Soccer/Little League Parcel

3.3.3.1 Definition

The Soccer/Little League parcel is defined as the area encompassing the soccer fields, practice football field, former Little League fields, and Parking Lot 7. A review of historical aerial photographs showed a small part of the practice football field overlaps a portion of the Site B parcel. The north-south maintenance road connecting Site B to the North Yard area dissects a portion of this area and is discussed under the Site B parcel section (Figure 33).

3.3.3.2 Parcel Investigation Summary

Soccer/Little League investigation activities have occurred as part of the perimeter, ballfields, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Soccer/Little League parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs, with subsequent investigations focusing on PCBs in soil and VOCs in groundwater. Soil borings BS-01 through BS-12 and BG-01 through BG-12 were advanced during earlier investigations to establish background conditions associated with the Regulated Unit.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2, and Figures B-7 through B-12.

3.3.3.3 Key Findings

Aerial photographs, historic land use information, and other existing records indicate that no known waste management activities occurred in this area. Generally, COI detections above TL at this parcel appear to either be related to adjacent parcel activities or represent isolated (sporadic) occurrences resulting from anthropogenic activities rather than past waste management practices.

VOCs. VOCs were not detected above TL in soils at the Soccer/Little League parcel.

VOCs were detected in groundwater above TL in three locations at the Soccer/Little League parcel. Benzene was detected at depth in one isolated location next to a public roadway, perimeter boring SB-121. Benzene was not present above TL in surrounding soils or downgradient in groundwater. Chlorinated solvents were detected at groundwater sample locations SB-502 and SB-503. These sample locations are just north and downgradient of the North Yard parcel and are likely associated with the North Yard management areas. VOCs were not detected above TL in bedrock groundwater samples collected at the Soccer/Little League parcel.

PAHs. PAHs were sporadically detected above TL in soils and groundwater in isolated areas. As discussed previously, occurrence of PAHs reflects general anthropogenic background levels and not releases from facility practices.

Phthalates. Phthalates were not detected in soils above TL at the Soccer/Little League parcel. Bis(2-ethylhexyl)phthalate was the only phthalate detected at one groundwater location, SB-176, at a concentration exceeding TL. The bis(2-ethylhexyl)phthalate concentration of 16 µg/L is within a typical expected laboratory contaminant range.

Metals. Arsenic was sporadically detected above TL in soils in the Soccer/Little League parcel. The single soil sample (SB-216) containing cadmium above TL did not produce similar analytical results when resampled during a later investigation phase. Therefore, the cadmium is expected to be an isolated occurrence and not representative of parcel conditions.

Cadmium, beryllium, copper, lead, nickel, and titanium were detected above TL in groundwater at several locations at the Soccer/Little Leagues parcel.

PCBs. PCBs were detected above TL in soil sample locations at the Soccer/Little League parcel. With the exception of one location (SB-502), the PCB concentrations at these locations are below the Toxic Substances Control Act (TSCA) unrestricted residential action level of 10 ppm. The surface soil sample from SB-502 is located on the North Yard parcel boundary.

PCBs were not detected in groundwater above TL at the parcel.

3.3.4 North Yard Parcel

3.3.4.1 Definition

The North Yard parcel is a controlled access area bordered by Orchard and Hower streets. The parcel includes the following areas (Figure 34):

- Regulated Unit
- Spray pond
- Wastewater treatment ponds
- Dewatering ponds
- Multiple maintenance and distribution buildings
- Parking Lot 9

3.3.4.2 Parcel Investigation Summary

Regulated Unit investigation activities have occurred in multiple phases from 1988 through 1997. Investigation activities expanding into the North Yard have occurred as part of the perimeter, ballfields, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the earliest North Yard parcel investigations were initially analyzed for VOCs, phthalates, and metals, with subsequent (1999 through 2001) investigations focusing on VOCs, phthalates, metals, PCBs, and PAHs as COIs.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2 and Figures B-13 through B-19.

3.3.4.3 Key Findings

Aerial photographs and existing records indicate that the former SWMU area within the present location of Building 36 was removed prior to Building 36 construction. Other SWMUs and AOCs, such as the Regulated Unit and former PCE tank, also previously operated in the North Yard parcel. COI detections above TL generally are related to one or more of the SWMUs that operated in this parcel.

VOCs. VOCs were detected above TL in soils and groundwater throughout the North Yard parcel, including the majority of the Regulated Unit area. VOCs were also detected above TL in bedrock groundwater samples immediately downgradient from management units, specifically a former PCE tank adjacent to the Regulated Unit area. However, VOCs were not detected above TL in bedrock groundwater samples downgradient from the initial bedrock groundwater sampling area.

PAHs. PAHs were detected above TL in the soils in seven North Yard locations. The majority of these locations are in the northern part of the North Yard and may be associated with previous coal storage areas.

PAHs were detected above TL in groundwater at three locations in the North Yard parcel. Two locations (SB-123 and SB-124) are in the northwest corner of the parcel in coal-covered parking lots. The other location (SB-436) is likely associated with North Yard coal storage areas. PAHs were also detected above TL in groundwater samples in the Site A parcel downgradient of the North Yard.

Phthalates. Phthalates were detected above TL at several soil locations in the North Yard parcels, including the central and southern parts of the Regulated Unit area. These detections appear to be isolated to the North Yard waste management areas.

Phthalates were detected above TL in groundwater at the North Yard parcel. Most of the detections appear to be isolated to North Yard waste management areas. Field observations indicate the presence of liquids, likely a phthalate product, floating on groundwater samples.

Metals. Metals were detected above TL in the soils throughout the Regulated Unit Area in the North Yard parcel and in the northern parcel area. Metals concentrations appear to be mostly related to areas containing fill materials. These areas have been associated with past waste management practices.

Metals were detected above TL in groundwater at the North Yard parcel only in the Regulated Unit area and a small area in the northwest parcel boundary.

PCBs. PCBs were detected above TL in soil throughout the North Yard parcel. However, only six locations (SB-275, SB-426, SB-431A, SB-433A, SB-462, and SB-509) had PCB concentrations above 10 ppm. PCB concentrations higher than 10 ppm generally were confined to surface soil.

PCBs were detected above TL in two groundwater samples, SB-436 and SB-439, both located north of Building 36. Location SB-439 had a PCB groundwater detection at the TL of 1 µg/L, and SB-436 had a detection at 5,000 µg/L. These concentrations are assumed to be associated with particulates that might have been suspended in the groundwater.

3.3.5 Site A Parcel

3.3.5.1 Definition

The location and approximate size of the Site A parcel was estimated from information provided in Hoover's *CERCLA Certification Regarding Potential Releases from Solid Waste Management Units* (March 14, 1986), and refined through the use of aerial photographs. The Site A parcel also includes Parking Lots 10, 10A, and 11 (Figure 35).

3.3.5.2 Parcel Investigation Summary

Site A investigation activities have occurred as part of the perimeter, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Site A parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs, with subsequent investigations focusing on VOCs as the primary COIs.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2 and Figures B-20 through B-25.

3.3.5.3 Key Findings

Aerial photographs and existing records indicate wastes such as enameling and powerhouse sludges, and miscellaneous off-specification products (e.g., World War II helmet liners) were disposed in the area. Dredged sludge from the wastewater treatment ponds may also have been disposed of in this parcel. COI detections above TL at this parcel generally are related to these fill areas associated with past waste management practices.

VOCs. One VOC, TCE, was detected above TL in soils at two locations in the central part of the Site A parcel. These locations correspond to areas with fill materials.

VOCs were detected above TL in groundwater at several locations in the northern and southern areas of the parcel, downgradient of North Yard parcel and possibly the Middle Lots parcel areas, respectively. However, VOCs were not detected above TL in bedrock groundwater samples collected at Site A.

PAHs. PAHs were detected above TL in several soil and groundwater sampling locations at the Site A parcel, in some cases at sampling locations within areas containing fill materials. The PAH concentrations in soil may be associated with anthropogenic sources, such as pavement.

Phthalates. Phthalates were not detected above TL in soils at the Site A parcel. One phthalate was detected above TL in groundwater at four locations around the Site A perimeter. Bis(2-ethylhexyl) phthalate concentrations at these locations, which ranged between 10 and 23 µg/L, are expected to be associated with particulates in groundwater samples (e.g., sample SB-125 contained suspended solids at a concentration of 92,000 mg/L).

Metals. Arsenic, tin, and lead were sporadically detected above TL in the soils of isolated areas containing fill associated with past waste management practices. Arsenic in soil at the facility reflects naturally-occurring levels.

Dissolved concentrations of lead, titanium, and thallium were sporadically detected above TL in groundwater.

PCBs. PCBs were detected above TL in soil at three Site A locations (SB-128 and SB-417). These locations, which contain PCB concentrations that are well below the TSCA unrestricted residential action level of 10 ppm, generally correspond to fill areas associated with past waste management practices. The extent of fill in Site A, shown on Figure 36, was delineated by evaluation of soil boring log data and historical aerial photographs.

PCBs were not detected above TL in groundwater samples at the Site A parcel.

3.3.6 Middle Lots Parcel

3.3.6.1 Definition

The Middle Lots parcel is defined as Parking Lots 4, 5, 8, and 12 (Figure 37). The parcel is transected by the industrial sewer and the former enameling sewer.

3.3.6.2 Parcel Investigation Summary

Middle Lots parcel investigation activities have occurred as part of the perimeter, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Middle Lots parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs, with a subsequent investigation focusing on VOCs as the primary COIs.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2 and Figures B-26 through B-29.

3.3.6.3 Key Findings

Aerial photographs, historic land use information, and other existing records indicate that no known waste management activities occurred in this area. Generally, COI detections above TL at this parcel appear adjacent to the industrial sewer which transects the parcel.

VOCs. VOCs were not detected above TL in soils at the Middle Lots parcel.

VOCs were detected above TL in unconsolidated groundwater at two locations at the Middle Lots Parcel. PCE, TCE, and cis-1,2-DCE were detected above TL at SB-507, and TCE and cis-1,2-DCE were detected above TL at SB-537. Both sample locations are in the center of the parcel. Chlorinated VOCs were also detected above TL in groundwater downgradient of

the Middle Lots (Parking Lot 10). VOCs were not detected above TL in bedrock groundwater samples collected at the Middle Lots.

PAHs. PAHs were not detected above TL in soils at the Middle Lots parcel. PAHs were detected in two soil samples collected adjacent to the Middle Lots parcel boundaries in Parking Lot 10 and near the active facility.

PAHs were detected above TL in groundwater at a single location, SB-537, at the Middle Lots parcel. However, PAHs were not detected in soil at this location.

Phthalates. Phthalates were not detected in soils or groundwater above TL.

Metals. Metals were not detected above TL in soils at the Middle Lots parcel.

Barium and titanium were detected above TL in groundwater at the Middle Lots parcel at locations SB-541 and SB-537, respectively. Thallium was detected above TL in one dissolved groundwater sample collected at perimeter boring SB-135 adjacent to Parking Lots 4 and 5.

PCBs. PCBs were not detected in soils or groundwater above TL.

3.3.7 Active Facility Parcel

3.3.7.1 Definition

The location of the Active Facility parcel is defined as the active manufacturing areas between Witwer and East Maple streets and between North Main Street and Taft Avenue (Figure 38).

3.3.7.2 Parcel Investigation Summary

Active Facility investigation activities have occurred as part of the perimeter, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the Active Facility parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs, with subsequent investigations focusing on VOCs as the primary COI.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2 and Figures B-30 through B-34.

3.3.7.3 Key Findings

Aerial photographs, historic land use information, and other existing records indicate that besides the industrial sewers, no known waste management activities occurred in this area. The Active Facility parcel is completely covered with buildings or pavement. Generally, COI detections above TL at this parcel appear to either be related to former process activities or represent isolated (sporadic) occurrences resulting from anthropogenic activities rather than past waste management practices.

VOCs. Three VOCs were detected above TL in soils at the Active Facility. Carbon tetrachloride and chloroform were detected above TL in SB-144 on the southwest corner of the parcel. These VOCs were not detected in surrounding soil samples or elsewhere onsite. Through additional sampling, it appears that these results are isolated. PCE was detected

above TL in SB-464 and SB-536. These locations are in the interior of the Building 18 manufacturing space and are likely associated with a former degreasing operation.

VOCs were not detected in shallow groundwater samples but were detected above TL in the bedrock groundwater samples collected beneath the former degreaser area. However, bedrock groundwater samples collected in multiple locations downgradient of the Active Facility did not contain VOC concentrations above TL. Vinyl chloride was detected above TL in one shallow groundwater sample collected south of the Active Facility in the South Lots parcel.

PAHs. PAHs were detected above TL in three soil sampling locations at the Active Facility parcel. PAHs were also detected above TL in groundwater sampling locations along the western boundary (perimeter) of the Active Facility parcel along Main Street. These PAH concentrations may be associated with particulates in groundwater samples.

Phthalates. Phthalates were not detected above TL in soils at the Active Facility parcel. One phthalate was detected above TL in one bedrock groundwater monitoring location. Bis(2-ethylhexyl) phthalate was detected at MW-22D at a concentration of 13 µg/L, which is within a typical expected laboratory contaminant range.

Metals. Arsenic was sporadically detected above TL in perimeter soil samples at the Active Facility parcel. Arsenic concentrations in soil resemble background levels on a site-wide basis.

Metals were not detected above TL in dissolved groundwater samples.

PCBs. PCBs were detected above TL in soil at one Active Facility location (SB-464). The PCB concentrations at this location are well below the TSCA unrestricted residential action level of 10 ppm.

PCBs were not detected above TL in grab or monitoring well groundwater samples.

3.3.8 South Lots Parcel

3.3.8.1 Definition

The South Lots parcel is defined as Parking Lots 1, 2, and 3 and the wooded area south of Parking Lot 3 (Figure 39).

3.3.8.2 Parcel Investigation Summary

South Lots investigation activities have occurred as part of the perimeter, offsite, and onsite investigations from November 1999 through March 2001. Soil and groundwater samples collected from the South Lots parcel were initially analyzed for VOCs, PAHs, phthalates, metals, and PCBs, with a subsequent investigation focusing on VOCs as the primary COIs. Soil borings SB-465 through SB-476 were collected at the South Lots parcel to establish background soil concentrations.

A summary of COI detections in soils and groundwater is provided in Appendix A, Tables A-1 and A-2 and Figures B-35 through B--37.

3.3.8.3 Key Findings

Aerial photographs, historic land use information, and other existing records indicate that no known waste management activities occurred in this area. The few COI detections above

TL are limited to isolated areas within this parcel and do not appear to be related to waste management activities.

VOCs. VOCs were not detected above TL in soils or groundwater at the South Lots parcel.

PAHs. PAHs were detected above TL in soils at the South Lots parcel. PAHs were also detected slightly above TL in the background soil samples. These generally appear in shallow samples and may reflect anthropogenic influences, such as asphalt or pavement.

PAHs were sporadically detected above TL in shallow and bedrock groundwater samples at the South Lots parcel.

Phthalates. Phthalates were not detected in soils or groundwater above TL.

Metals. Arsenic was the only metal detected above TL in one soil sample location at the South Lots parcel. Arsenic concentrations in soil resemble background levels on a site-wide basis.

Total titanium was detected above TL in one monitoring well sample from MW-21S. Metals were not detected above TL in grab or bedrock groundwater samples collected at the South Lots Parcel.

PCBs. PCBs were not detected in soils or groundwater above TL.

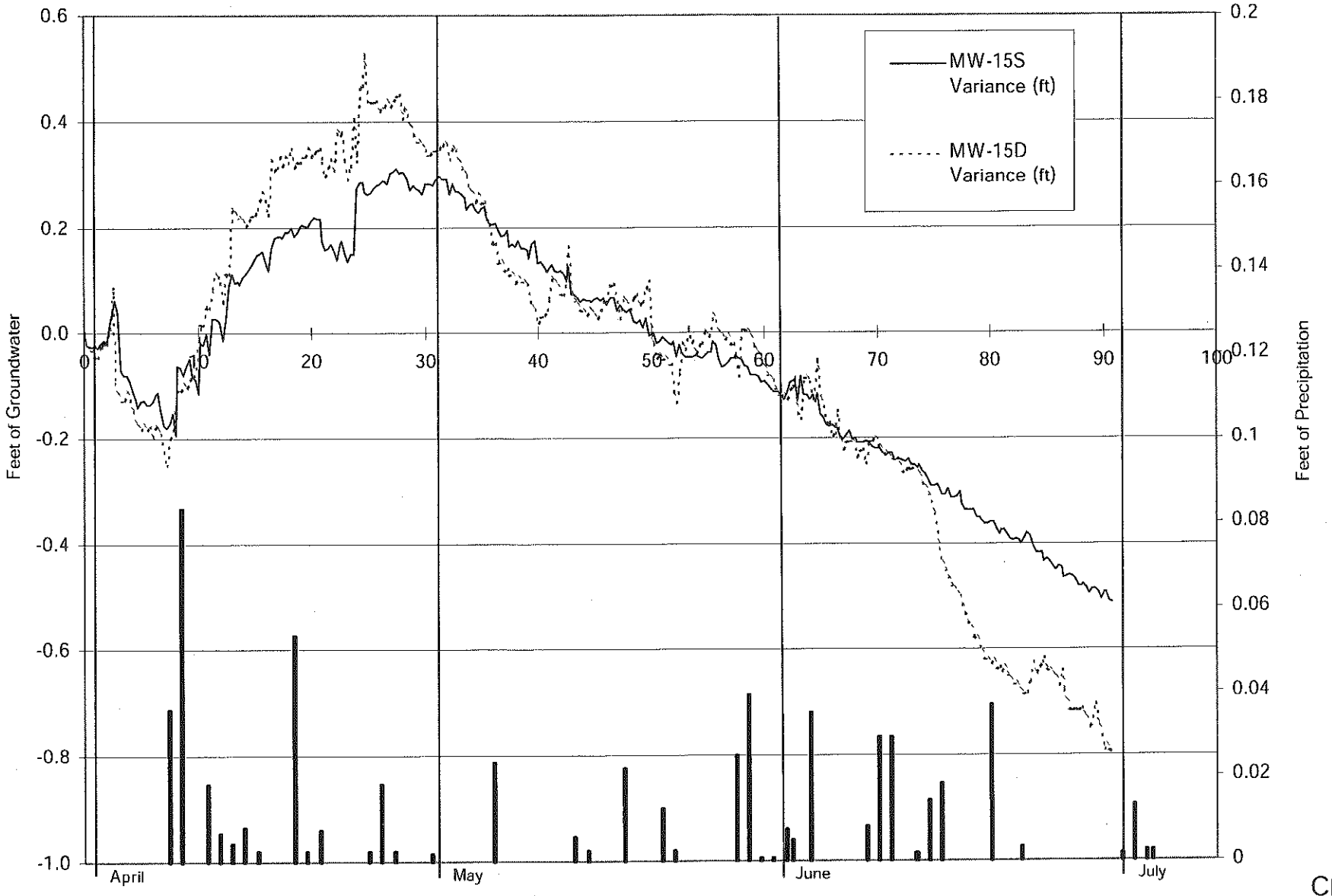


Chart 1

Precipitation and Groundwater Response

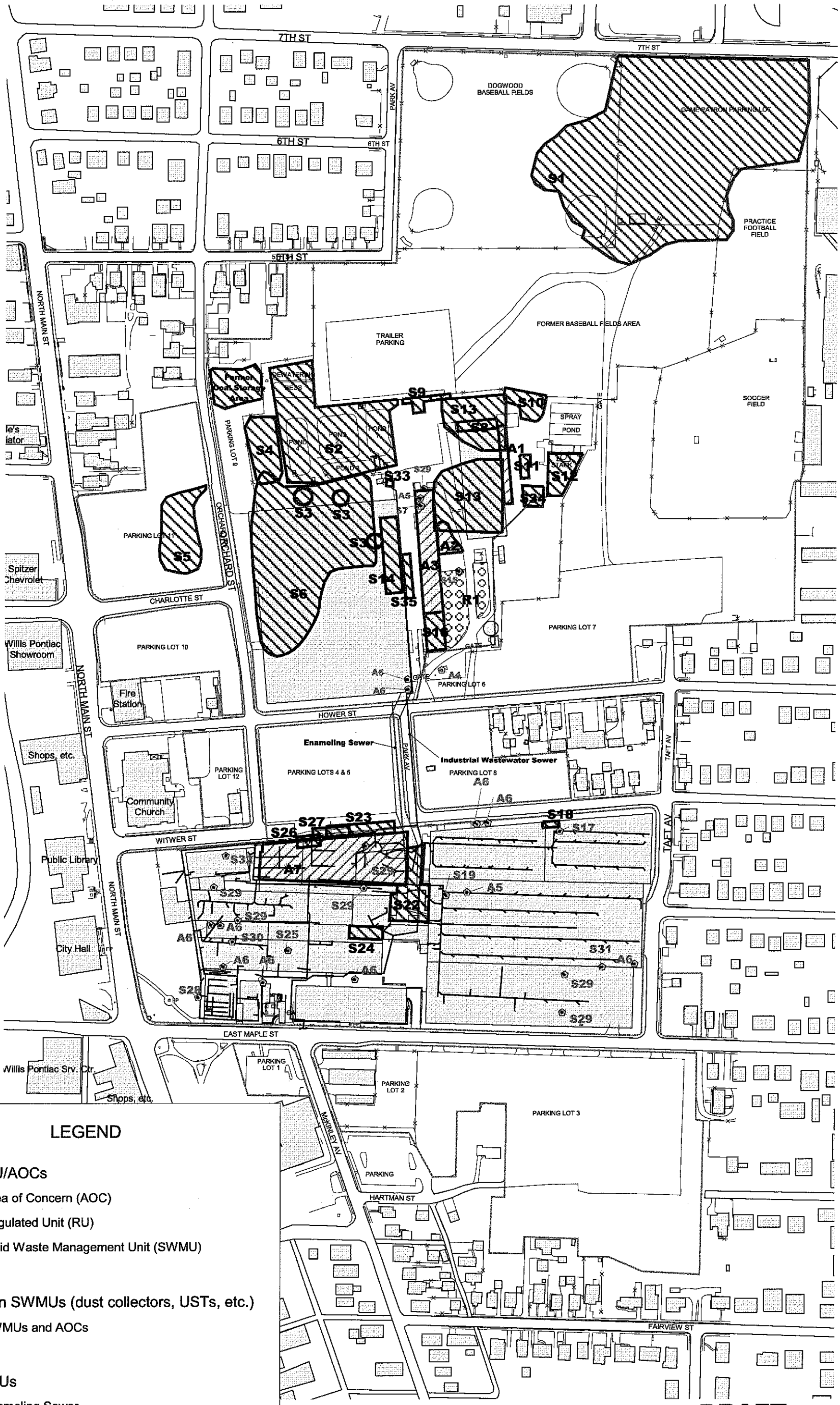
Onsite Investigation Report

The Hoover Company, North Canton, Ohio

Groundwater elevations on March 29, 2001 were 1145.58' at MW-15S and 1131.84' at MW-15D.

CH2MHILL

DAY1/J:/hoover/A/4/ER/01/Internal Draft/Conceptual Model/Chart 1 - Precip_GW at MW-15SD.ppt 09/26/01



LEGEND

Areal SWMU/AOCs

- Area of Concern (AOC)
- Regulated Unit (RU)
- Solid Waste Management Unit (SWMU)

Point-location SWMUs (dust collectors, USTs, etc.)

- SWMUs and AOCs

Piping SWMUs

- Enameling Sewer
- Industrial Wastewater Sewer

- 2000 Property Boundary

DRAFT

The Waste Management Inventory report is a work-in-progress.

200 0 200 400 600 Feet

N

NOTES:
1. Basemap derived from aerial orthographic photos taken January 17, 2000.
2. SWMU and AOC descriptions can be found in Table 3-1 of the Materials and Waste Management Areas Inventory (CH2M HILL 1997, revised 2000).

FIGURE 1
Solid Waste Management Unit and Area of Concern Locations
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

Antigone/Proj(J:)/Hoover/GIS/hov_swmu.apr Layout: SWMU Basemap 01/16/02

LEGEND

2000 Property Boundary

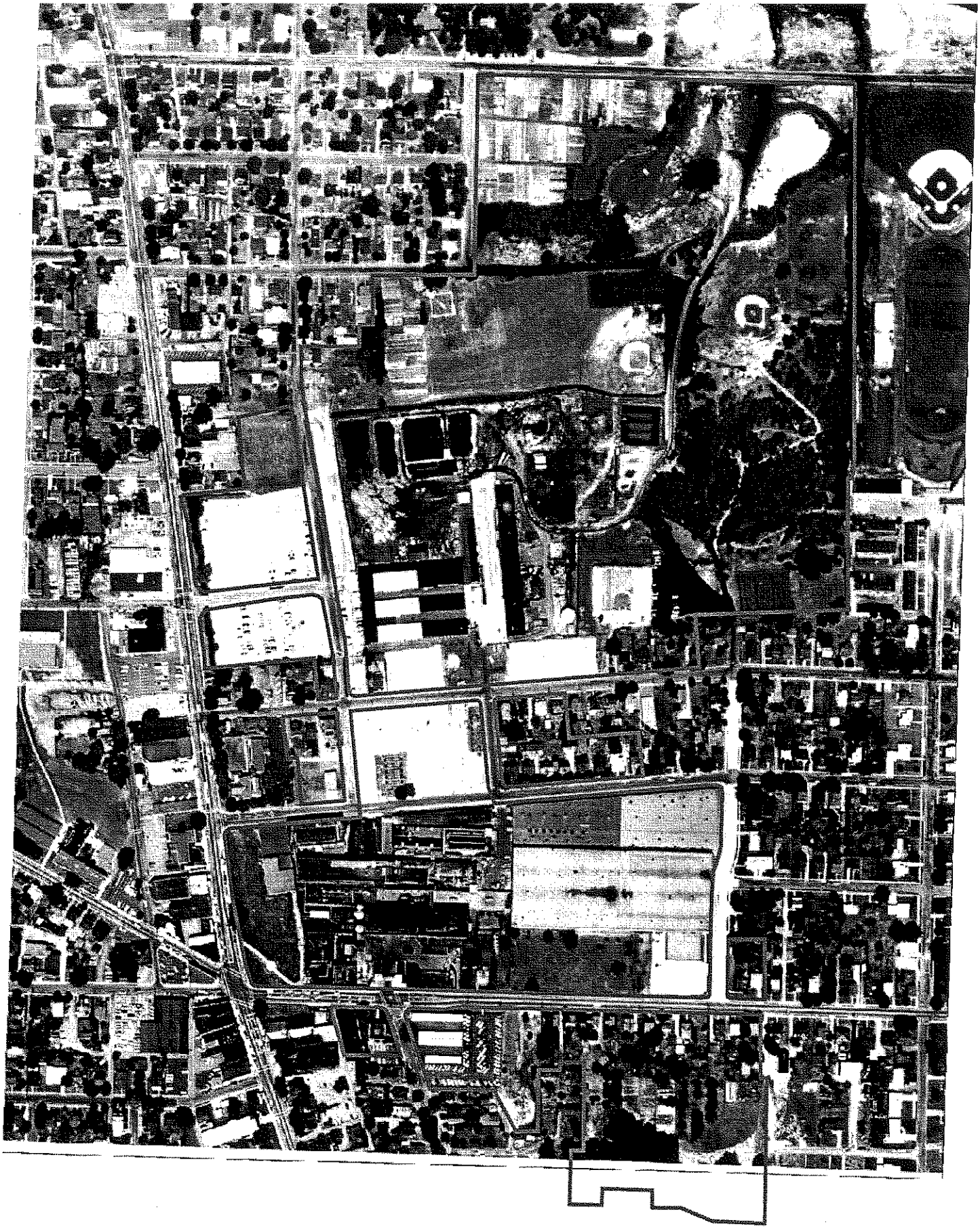
N

200 0 200 400 Feet

Figure 2
1934 Aerial Photo
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

Perseus/Proj(J:)/Hoover/GIS/hvrdlfs.apr Layout: 1934 aerial (layout) 09/27/01



LEGEND

2000 Property Boundary

N

200 0 200 400 Feet

Figure 3
1966 Aerial Photo
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

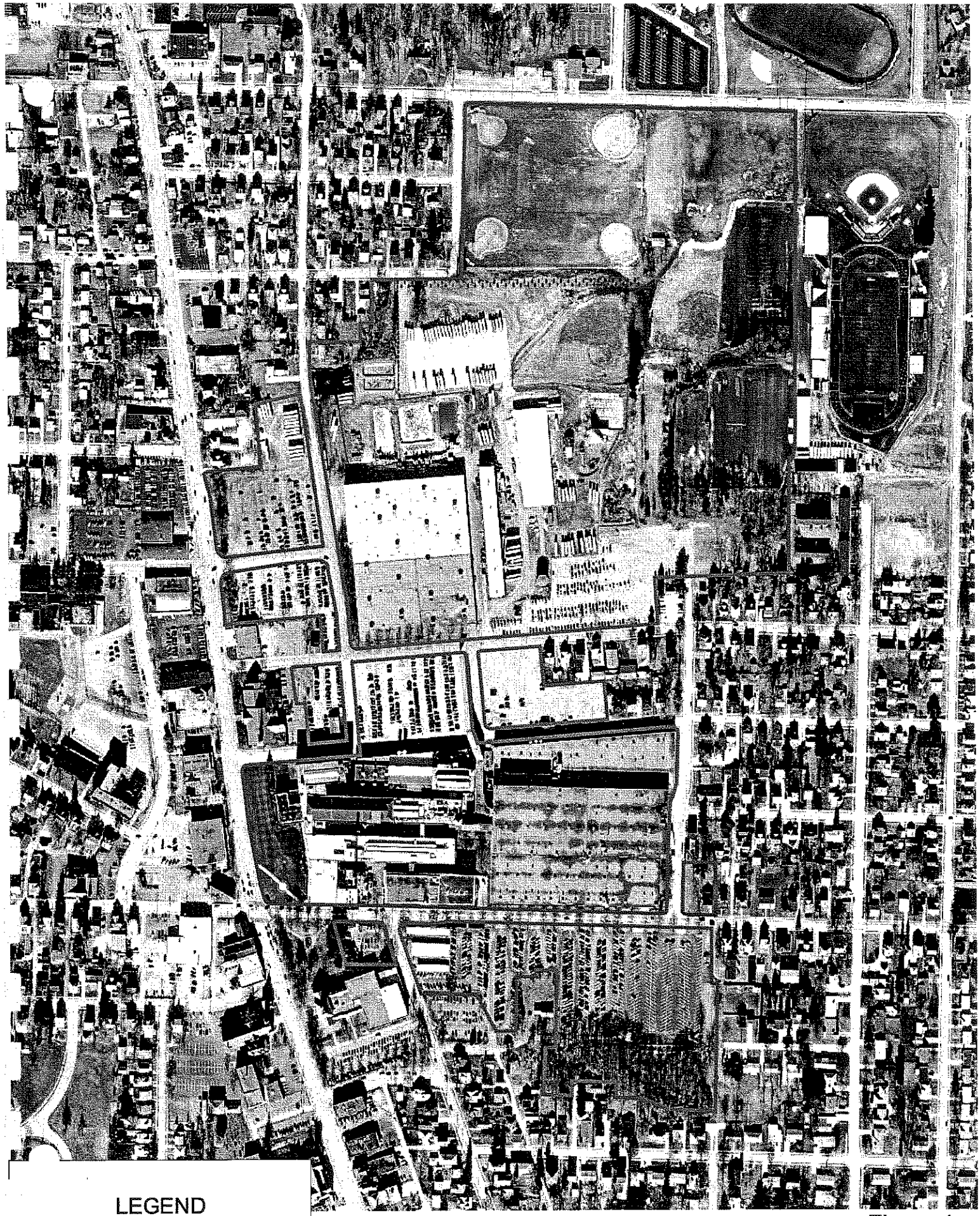
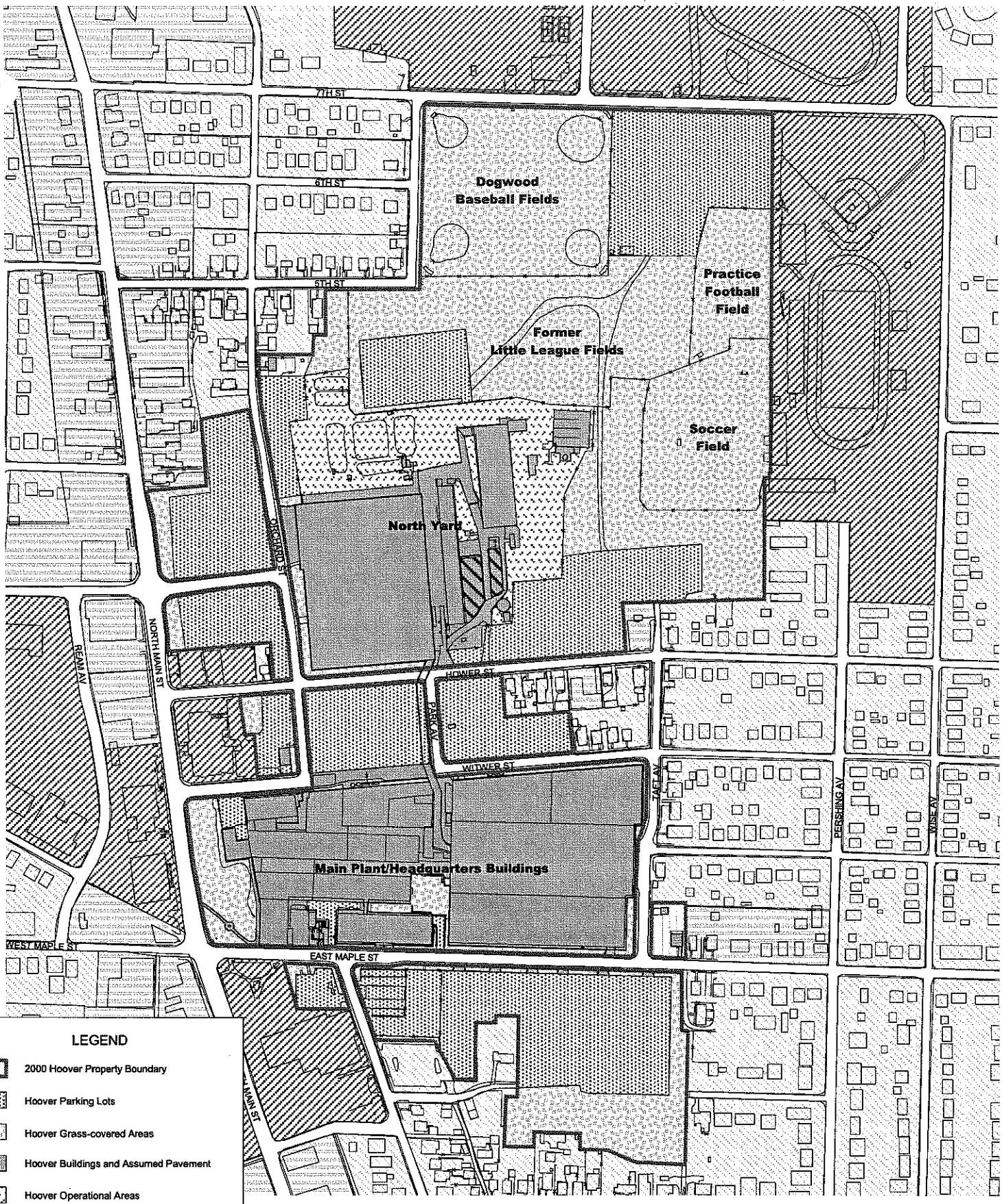


Figure 4
2000 Aerial Photo
Onsite Investigation Report
The Hoover Company, North Canton, Ohio
CH2MHILL



NOTES:
1. Basemap derived from aerial orthographic photos taken January 17, 2000.
2. This figure contains color detail which may be lost during duplication.

Figure 5
Land Use
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

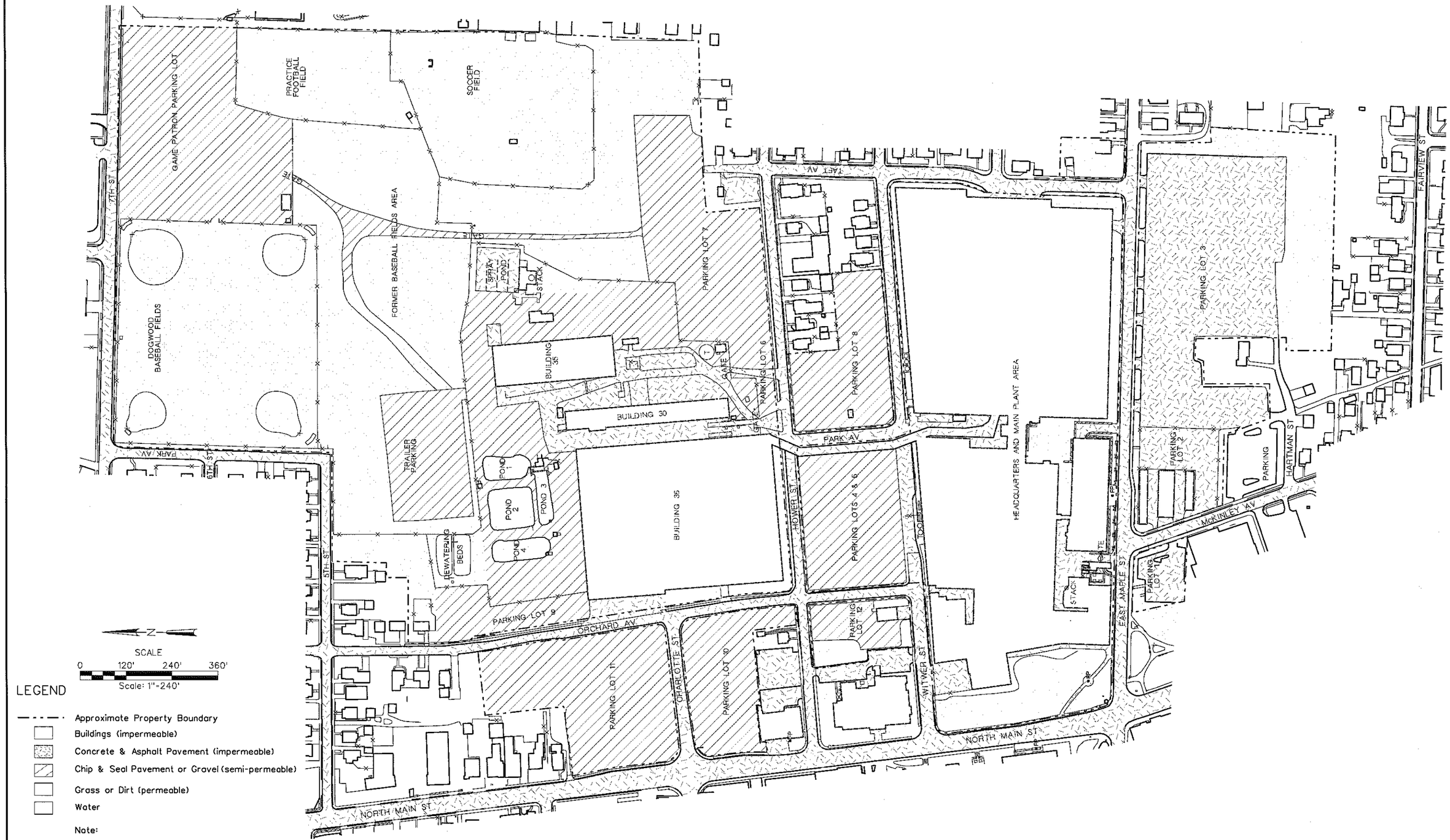
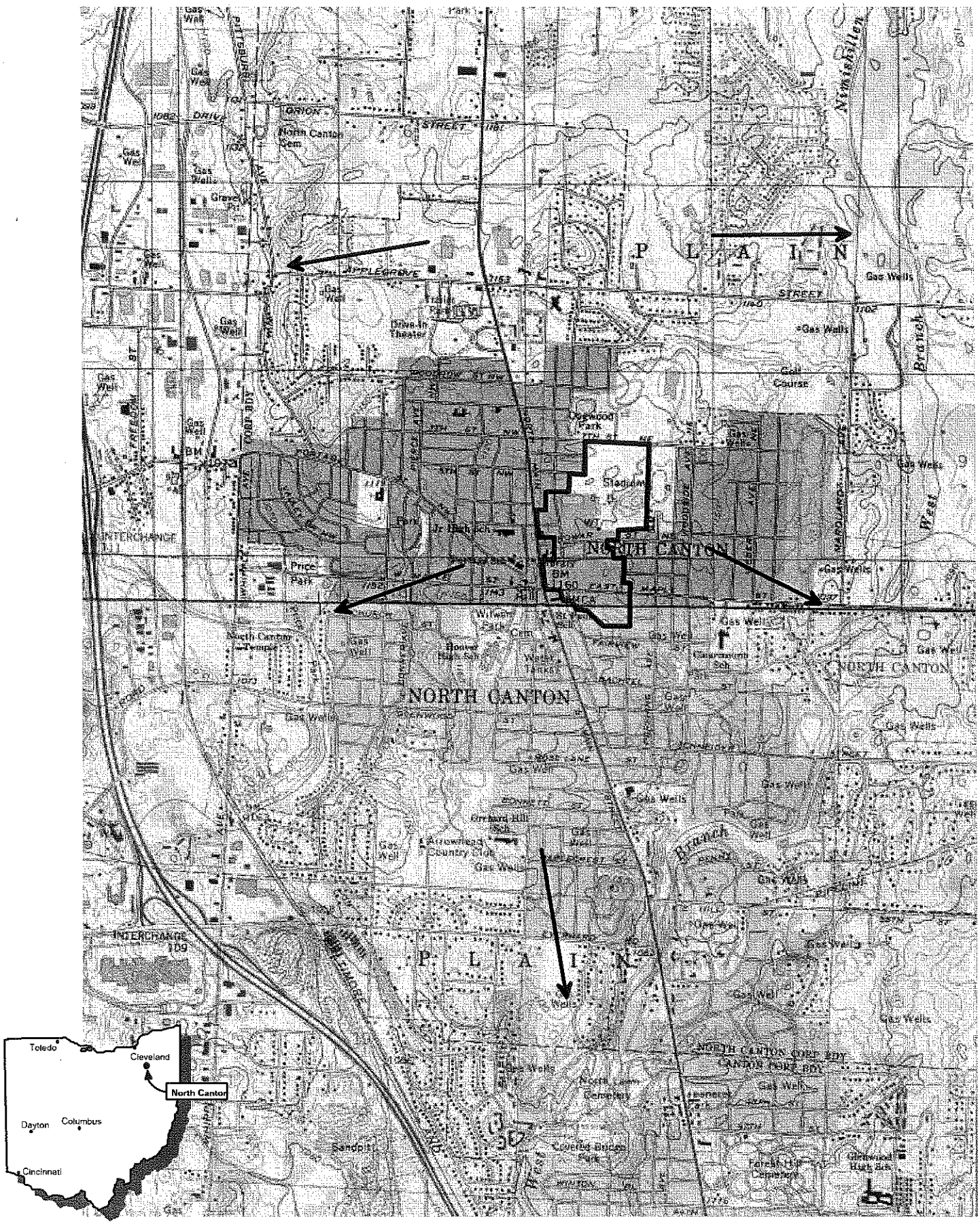


FIGURE 6
Ground Cover
Onsite Investigation Report
The Hoover Company, North Canton Ohio

CH2MHILL

\\Antigone\Hoover\155441 VCA\CAD\8303colr_2a.dgn 26-SEP-2001



Hoover Property Boundary

Ground Surface Downslope Direction

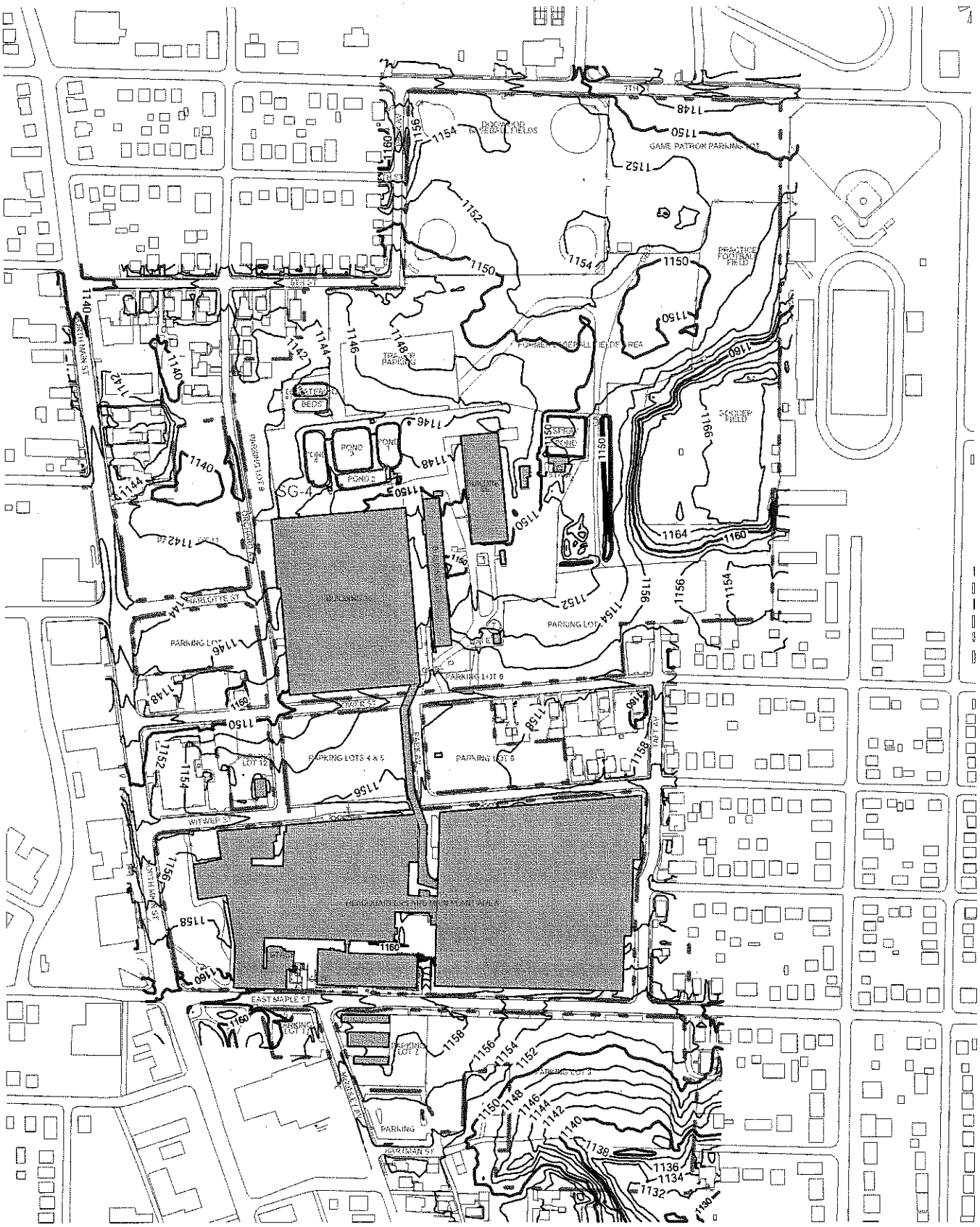
Figure 7

Regional Surface Topography

Onsite Investigation Report

The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

- 1160 — Surface elevation (feet) and contour. Contour interval = 2 feet (every 10 ft contour is bold). Labels are oriented upgradient.
- Hoover building
- Approximate property boundary

NOTES

1. Ground surface contours were obtained from the orthographic aerial photos taken on 1/17/00 and reference National Geodetic Vertical Datum of 1988 (NGVD88).
2. Base map derived from orthographic aerial photos taken January 17, 2000.

DAY1/j:/hoover/Figure 8 - Site topo.srf 09/26/01

Figure 8

Site Ground Surface Contours

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

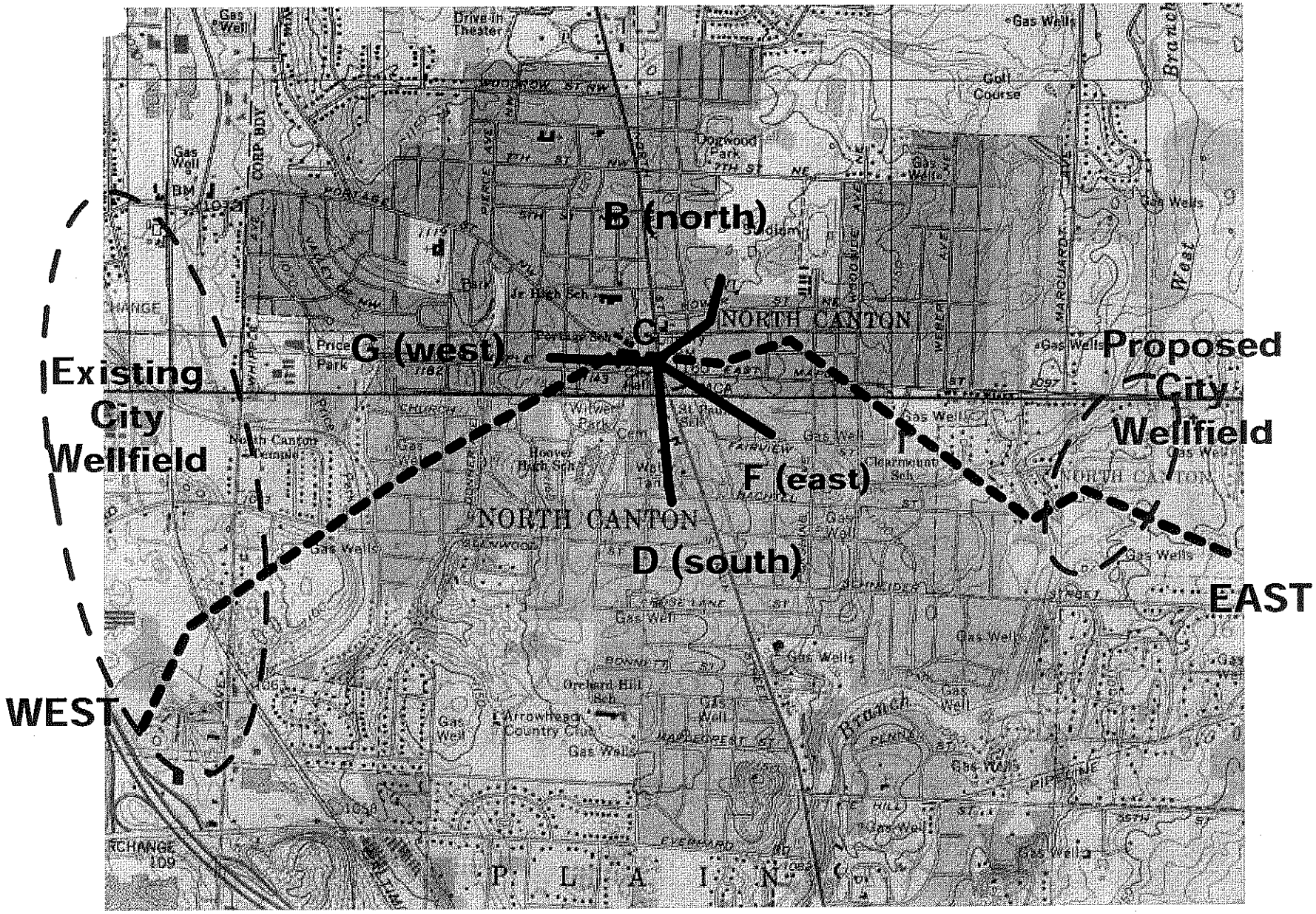
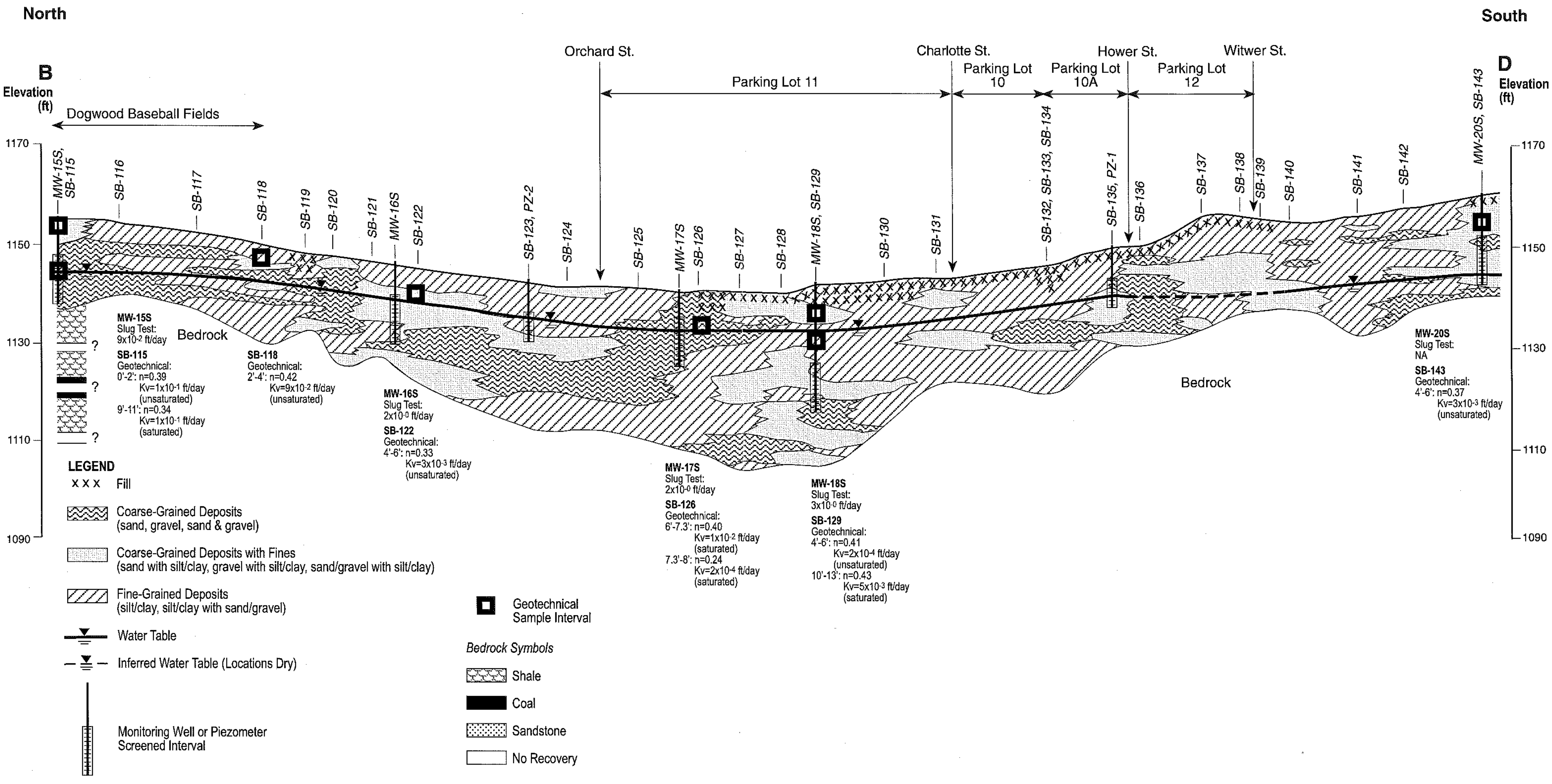


Figure 9
Cross Section Locations
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL


North
South
B
D
Elevation (ft)
Dogwood Baseball Fields
Orchard St.
Charlotte St.
Hower St.
Witwer St.
Parking Lot 11
Parking Lot 10
Parking Lot 10A
Parking Lot 12
1170
1150
1130
1110
1090
MW-15S, SB-115
SB-116
SB-117
SB-118
SB-119
SB-120
SB-121
MW-16S
SB-122
SB-123, PZ-2
SB-124
SB-125
MW-17S
SB-126
SB-127
SB-128
MW-18S, SB-129
SB-130
SB-131
SB-132, SB-133, SB-134
SB-135, PZ-1
SB-136
SB-137
SB-138
SB-139
SB-140
SB-141
SB-142
MW-20S, SB-143
Bedrock
Bedrock
MW-15S
Slug Test:
9x10-2 ft/day
SB-115
Geotechnical:
0'-2': n=0.39
Kv=1x10-1 ft/day
(unsaturated)
9'-11': n=0.34
Kv=1x10-1 ft/day
(saturated)
SB-118
Geotechnical:
2'-4': n=0.42
Kv=9x10-2 ft/day
(unsaturated)
MW-16S
Slug Test:
2x10-0 ft/day
SB-122
Geotechnical:
4'-6': n=0.33
Kv=3x10-3 ft/day
(unsaturated)
MW-17S
Slug Test:
2x10-0 ft/day
SB-126
Geotechnical:
6'-7.3': n=0.40
Kv=1x10-2 ft/day
(saturated)
7.3'-8': n=0.24
Kv=2x10-4 ft/day
(saturated)
MW-18S
Slug Test:
3x10-0 ft/day
SB-129
Geotechnical:
4'-6': n=0.41
Kv=2x10-4 ft/day
(unsaturated)
10'-13': n=0.43
Kv=5x10-3 ft/day
(saturated)
MW-20S
Slug Test:
NA
SB-143
Geotechnical:
4'-6': n=0.37
Kv=3x10-3 ft/day
(unsaturated)
LEGEND
XXX Fill
Coarse-Grained Deposits
(sand, gravel, sand & gravel)
Coarse-Grained Deposits with Fines
(sand with silt/clay, gravel with silt/clay, sand/gravel with silt/clay)
Fine-Grained Deposits
(silt/clay, silt/clay with sand/gravel)
Water Table
Inferred Water Table (Locations Dry)
Monitoring Well or Piezometer
Screened Interval
Geotechnical
Sample Interval
Bedrock Symbols
Shale
Coal
Sandstone
No Recovery

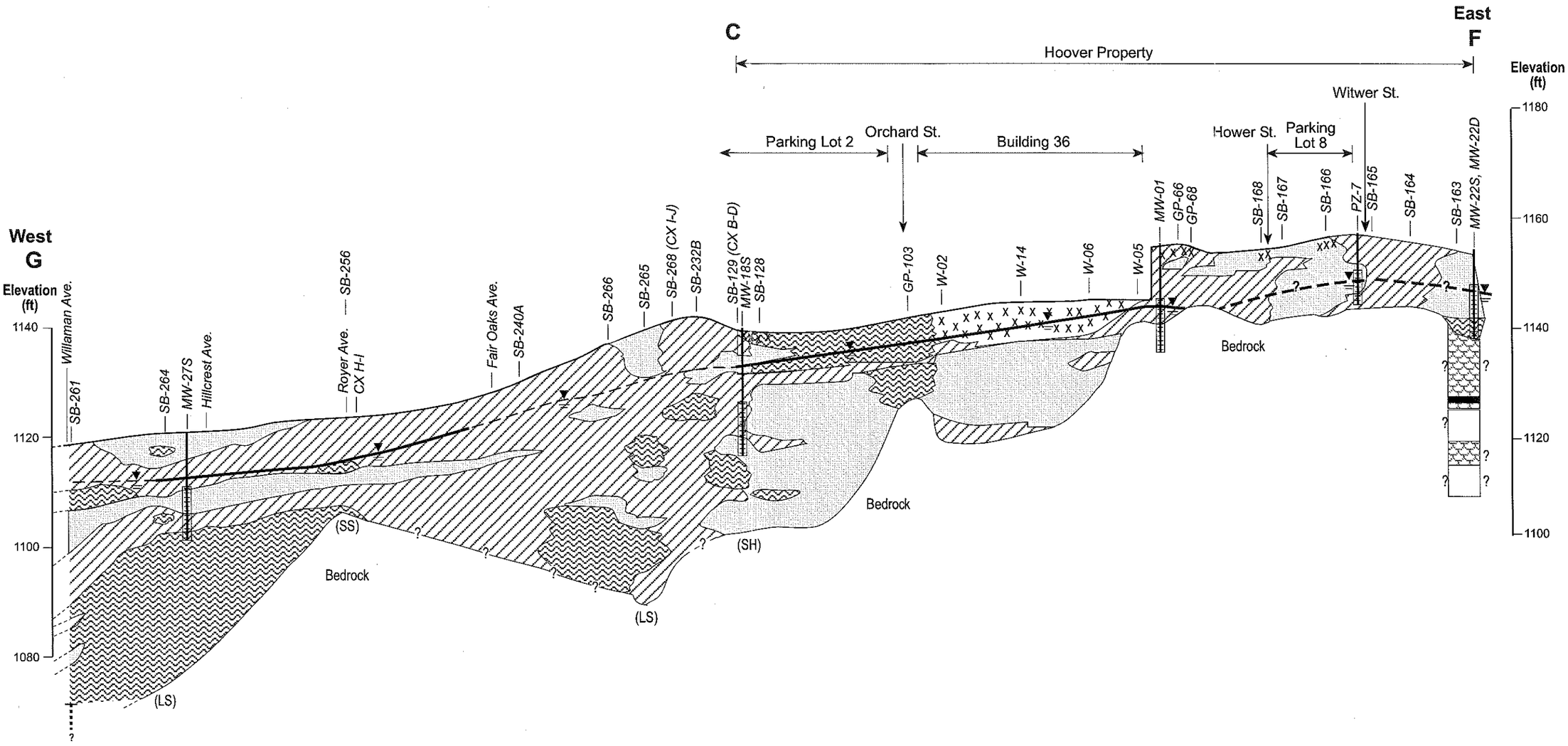
NOTES:

1. Elevations in feet above mean sea level are based on mean sea level data during 1980's (National Geodetic Vertical Datum of 1988).
2. The depth and thickness of the subsurface strata indicated on the section (profile) were generalized from and interpolated between test borings. Information on actual subsurface conditions exists only at the specific locations and dates indicated. Soil (rock) conditions and water levels at other locations may differ from conditions occuring at the boring locations. Also, the passage of time may result in a change in the conditions at these boring locations.
3. Hydraulic data from *Perimeter Investigation Report* (CH2M HILL, 2000).

0 200
Horizontal Scale

Figure 10
Conceptual Hydrogeological Cross-Section BD (West Perimeter)
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

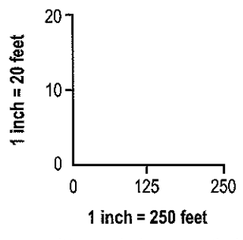
- x x x Fill
- Coarse-Grained Deposits (sand, gravel, sand & gravel)
- Coarse-Grained Deposits with Fines (sand with silt/clay, gravel with silt/clay, sand/gravel with silt/clay)
- Fine-Grained Deposits (silt/clay, silt/clay with sand/gravel)
- Monitoring Well or Piezometer Screened Interval
- Groundwater Elevation Based on May 2000 Groundwater Elevation Contour Map
- Inferred Groundwater Elevation based on Extrapolated May 2000 Groundwater Contours or Boring Groundwater Observations

(SS) = Sandstone
(SH) = Shale
(LS) = Limestone

Bedrock Symbols

- Shale
- Coal
- Sandstone
- No Recovery

SCALE:



(10 x vertical exaggeration)

NOTES:

1. Elevations in feet above mean sea level are based on mean sea level data during 1980's (National Geodetic Vertical Datum of 1988).
2. The depth and thickness of the subsurface strata indicated on the section (profile) were generalized from and interpolated between test borings. Information on actual subsurface conditions exists only at the specific locations and dates indicated. Soil (rock) conditions and water levels at other locations may differ from conditions occuring at the boring locations. Also, the passage of time may result in a change in the conditions at these boring locations.

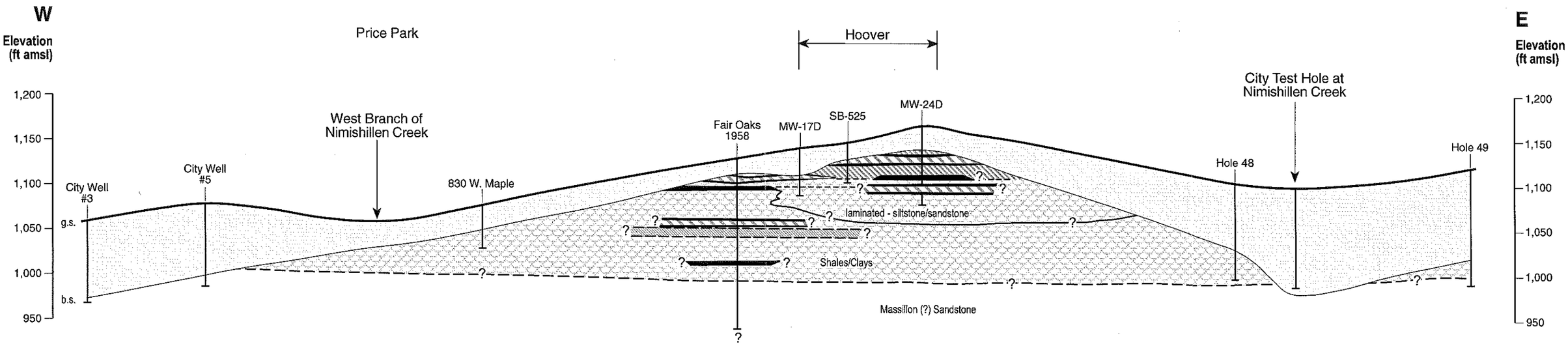
Figure 11

Conceptual Hydrogeological Cross-Section GF (Viking Street and Facility Center)

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

West

East



LEGEND

- Coal
- Limestone
- Sandstone
- Lateral facies change between siltstones, shales and sandstones
- Unconsolidated gravels, sands, silts and clays
- g.s. Ground surface
- b.s. Bedrock surface

1,250′

Vertical Exaggeration = 10

125′

NOTES:

1. Elevations in feet above mean sea level are based on mean sea level data during 1980's (National Geodetic Vertical Datum of 1988).
2. The depth and thickness of the subsurface strata indicated on the section (profile) were generalized from and interpolated between test borings. Information on actual subsurface conditions exists only at the specific locations and dates indicated. Soil (rock) conditions and water levels at other locations may differ from conditions occuring at the boring locations. Also, the passage of time may result in a change in the conditions at these boring locations.

Figure 12

Conceptual Bedrock Cross-Section (West-East)

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

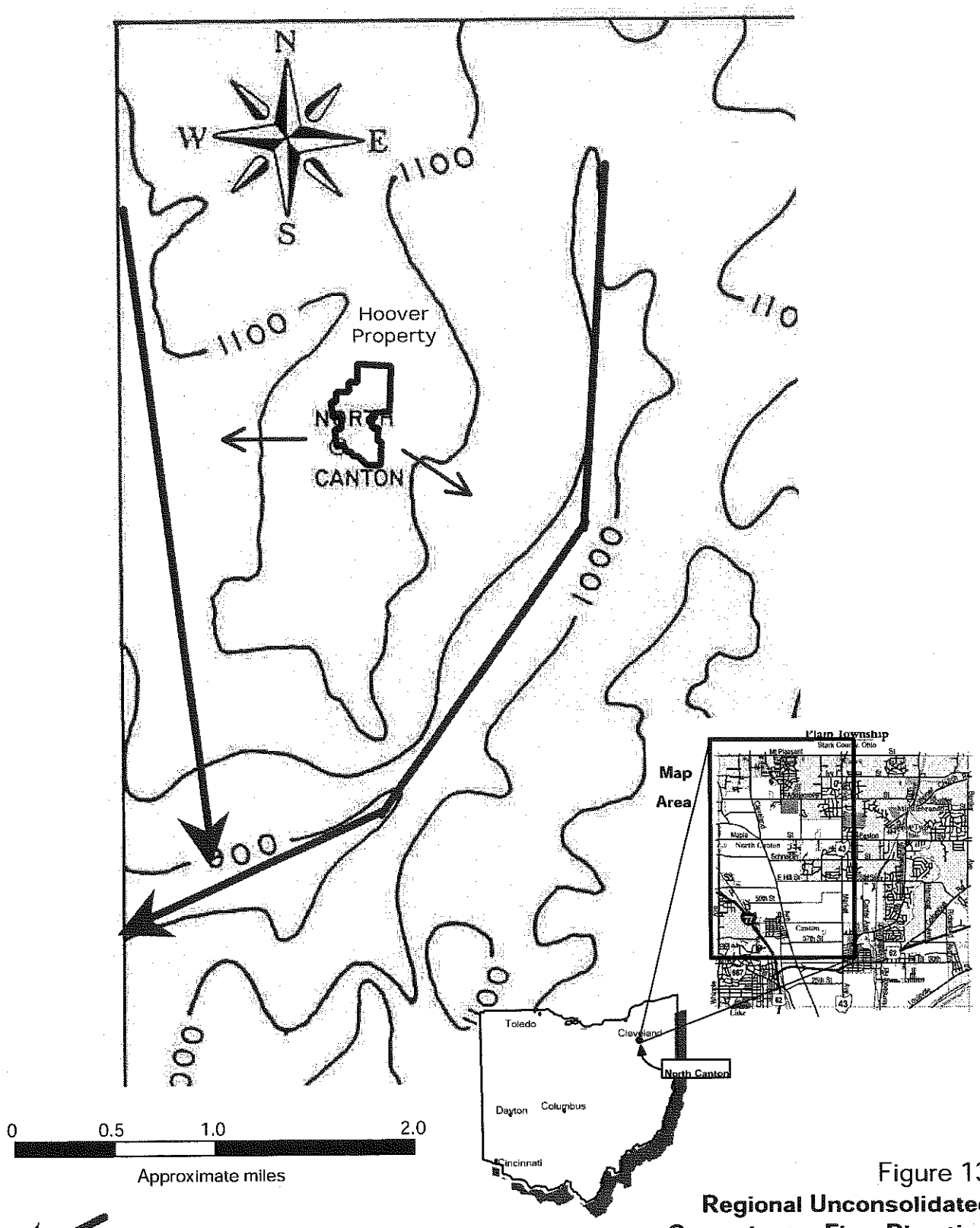


Figure 13

Regional Unconsolidated Groundwater Flow Direction and Bedrock Surface

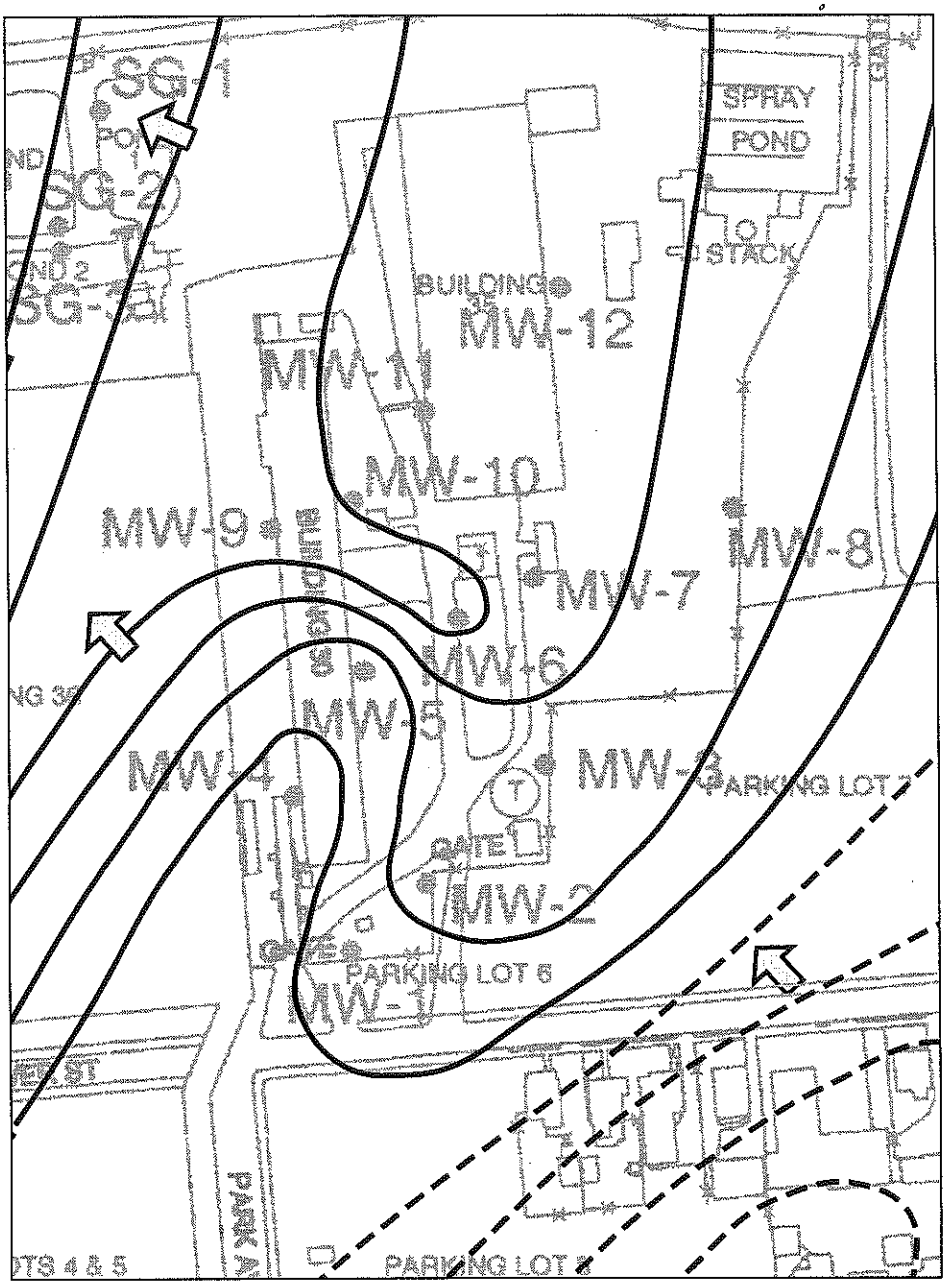
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

Bedrock basemap after Floyd Browne and Associates, 1988.

CH2MHILL

DAY1/j:/hoover/A/4/ER/01/Internal Draft/Conceptual Model/Figure 13 - Regional GW Flow.ppt 09/26/01

Location ID	Water Elevation (ft)
PZ-1	1139.81
PZ-2	1134.39
PZ-3	1138.45
PZ-4	1130.64
PZ-5	dry
PZ-6	1146.81
PZ-7	1149.22
PZ-8	1143.58
PZ-9	1145.18
SG-1	1142.47
SG-2	1141.41
SG-3	1141.83
SG-4	1141.34
MW-1	1144.21
MW-2	1143.16
MW-3	1143.15
MW-4	1145.02
MW-5	1144.29
MW-6	1141.09
MW-7	1142.66
MW-8	1143.61
MW-9	1141.42
MW-10	1142.22
MW-11	1142.22
MW-12	1142.18
MW-13S	1136.73
MW-15S	1144.79
MW-16S	1138.24
MW-17S	1134.23
MW-18S	1133.82
MW-20S	1145.49
MW-21S	1147.74
MW-22S	1146.71
MW-24S	1145.53
MW-25S	1114.30
MW-26S	1116.94
MW-27S	1112.10



LEGEND

- PZ-1 ● — Facility piezometer (PZ), staff gauge (SG), & monitoring well (MW) identifier and location
- 1143 — Groundwater surface elevation (feet) and contour
- Groundwater flow direction
- ? — Groundwater surface elevation unknown

NOTES

1. All monitoring wells and piezometers, but none of the staff gauges, were chosen to interpret the goundwater surface.
2. Contours are dashed where the groundwater potentiometric surface is inferred.
3. Base map derived from orthographic aerial photos taken January 17, 2000.

N

0 200

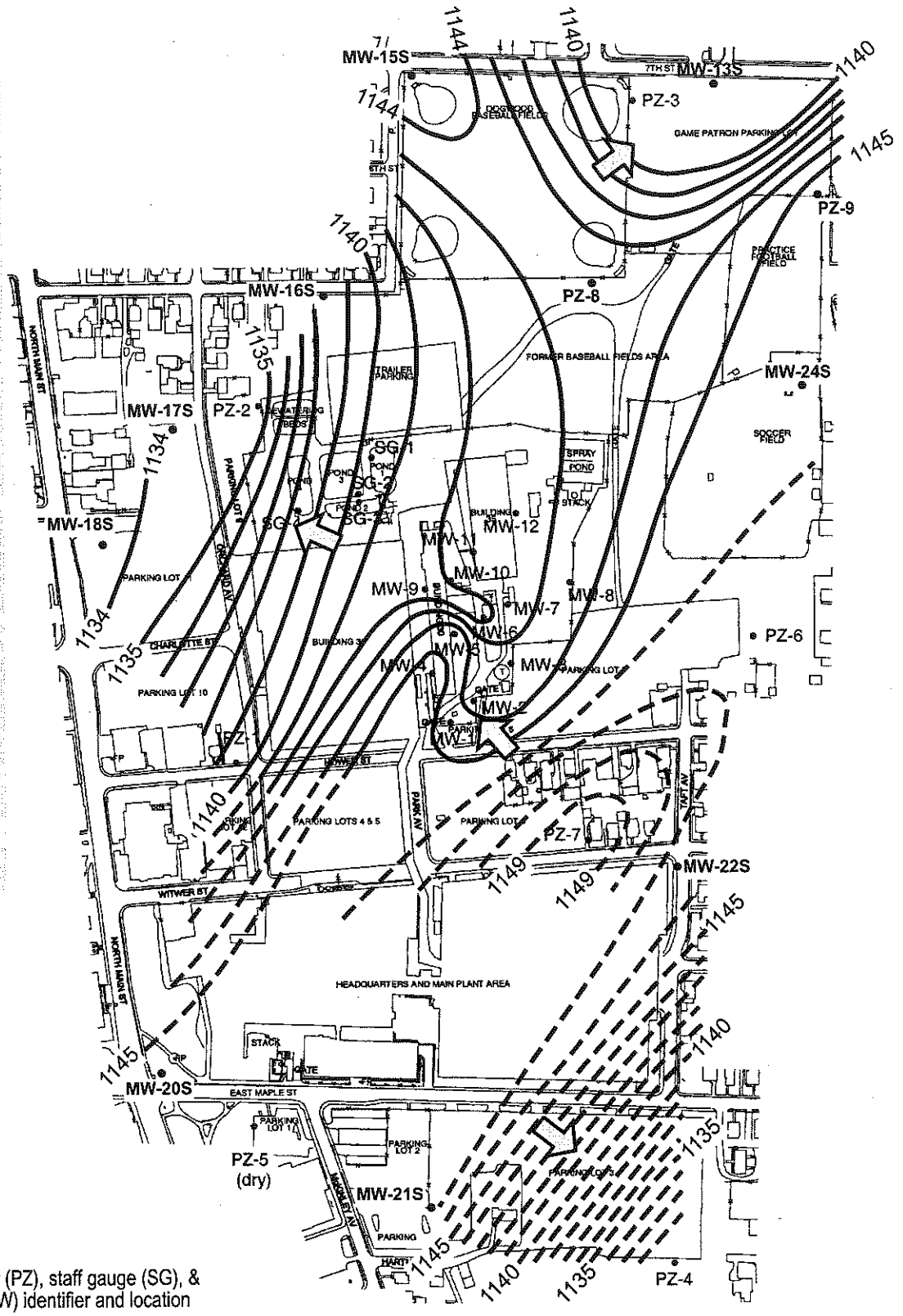
SCALE IN FEET

Figure 14

Groundwater Contours Affected By Buildings

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

Location ID	Water Elevation (ft)
PZ-1	1139.81
PZ-2	1134.39
PZ-3	1138.45
PZ-4	1130.64
PZ-5	dry
PZ-6	1146.81
PZ-7	1149.22
PZ-8	1143.58
PZ-9	1145.18
SG-1	1142.47
SG-2	1141.41
SG-3	1141.83
SG-4	1141.34
MW-1	1144.21
MW-2	1143.16
MW-3	1143.15
MW-4	1145.02
MW-5	1144.29
MW-6	1141.09
MW-7	1142.66
MW-8	1143.61
MW-9	1141.42
MW-10	1142.22
MW-11	1142.22
MW-12	1142.18
MW-13S	1136.73
MW-15S	1144.79
MW-16S	1138.24
MW-17S	1134.23
MW-18S	1133.82
MW-20S	1145.49
MW-21S	1147.74
MW-22S	1146.71
MW-24S	1145.53
MW-25S	1114.30
MW-26S	1116.94
MW-27S	1112.10



LEGEND

- PZ-1 ● Facility piezometer (PZ), staff gauge (SG), & monitoring well (MW) identifier and location
- 1143 Groundwater surface elevation (feet) and contour
- Groundwater flow direction
- ? Groundwater surface elevation unknown

NOTES

1. All monitoring wells and piezometers, but none of the staff gauges, were chosen to interpret the goundwater surface.
2. Contours are dashed where the groundwater potentiometric surface is inferred.
3. Base map derived from orthographic aerial photos taken January 17, 2000.

N

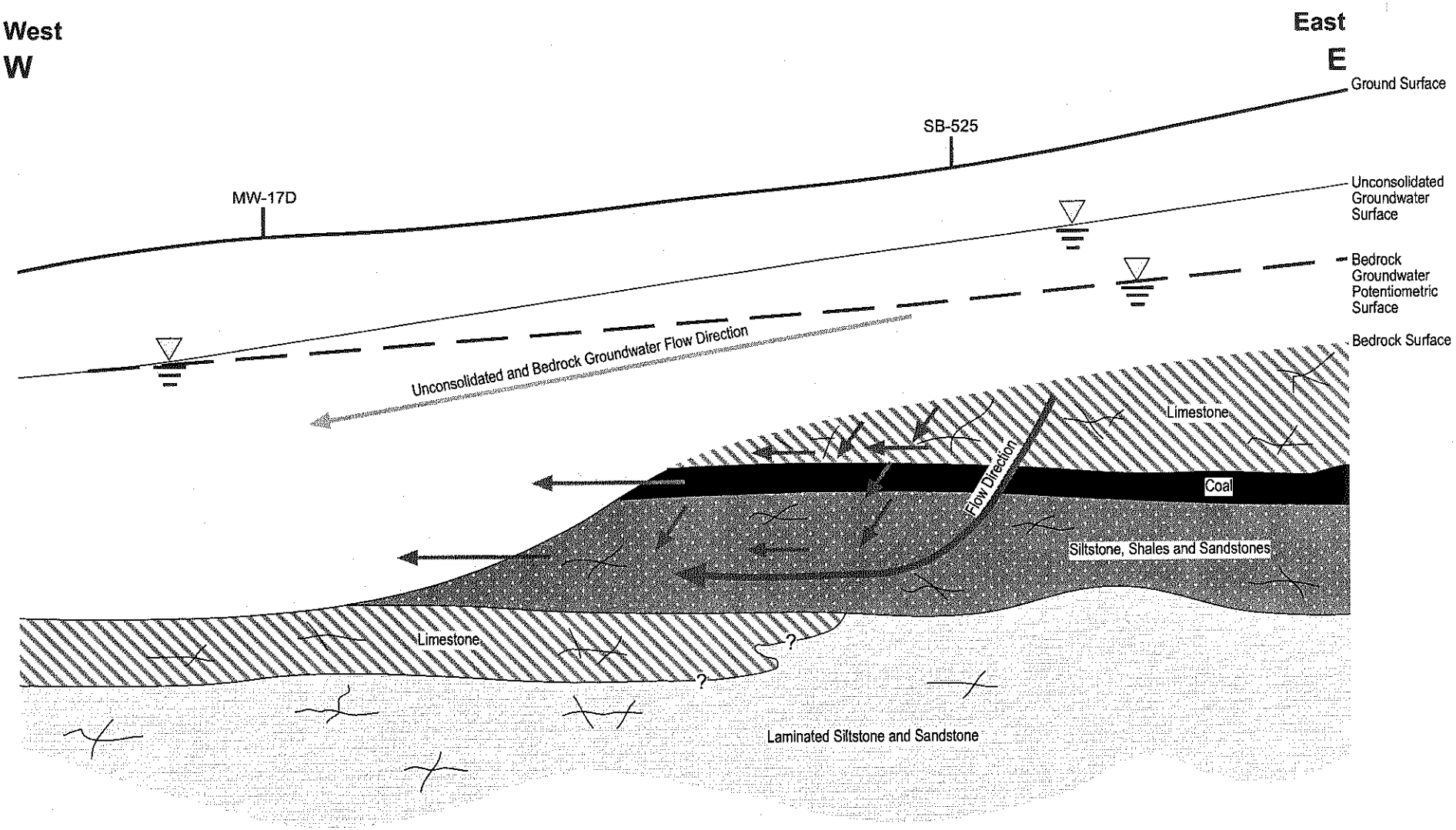
0 400

SCALE IN FEET

Figure 15

Interpreted Groundwater Potentiometric Surface

Onsite Investigation Report
The Hoover Company, North Canton, Ohio



LEGEND

- Unconsolidated gravels, sands, silts and clays
- Limestone
- Coal
- Siltstones, shales, sandstone
- Laminated siltstone and sandstone

Figure 16

Conceptual Groundwater Flow Through Bedrock

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

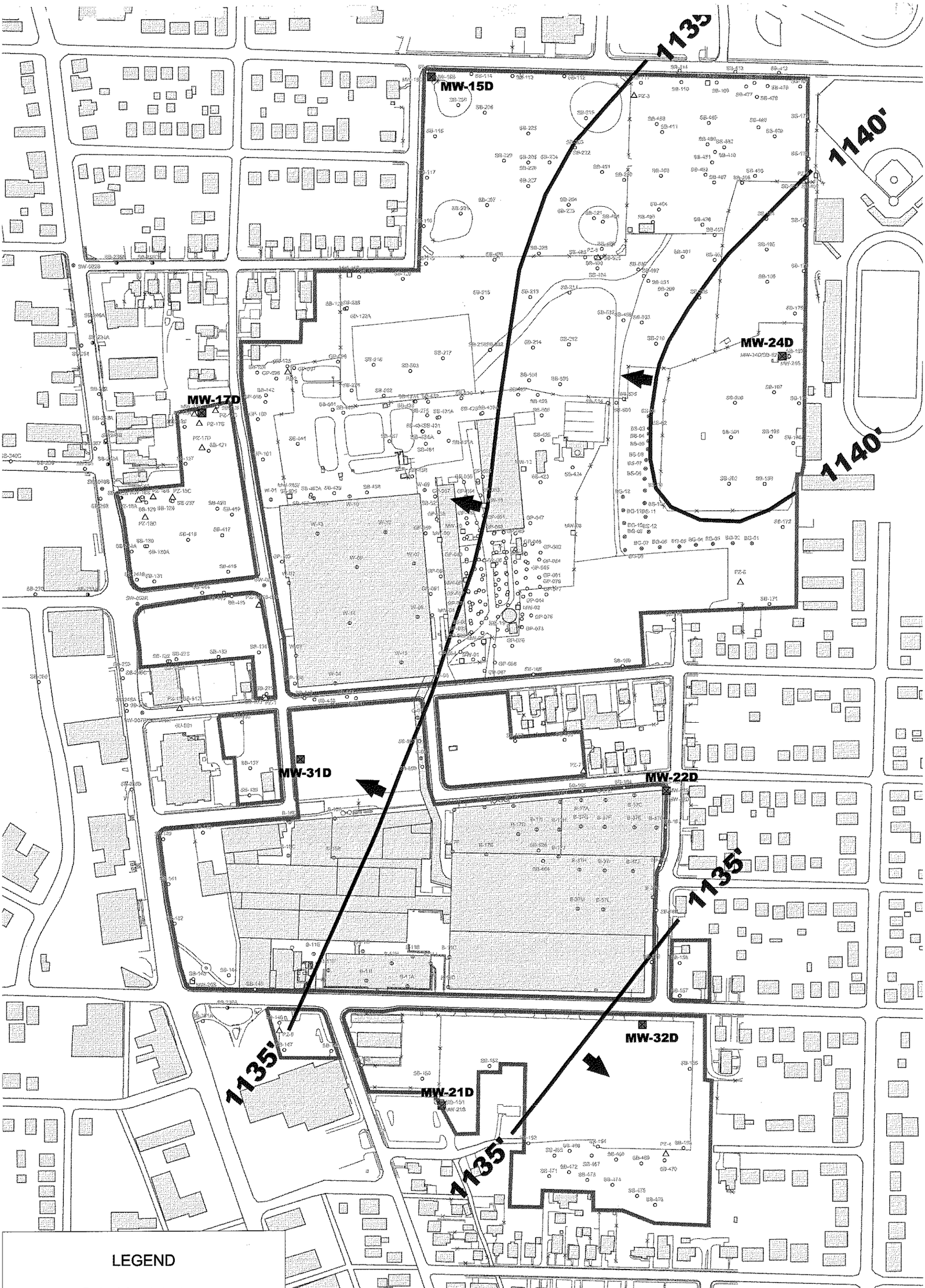


Figure 17
Bedrock Groundwater Flow Map
Onsite Investigation Report
The Hoover Company, North Canton, Ohio
CH2MHILL

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Antigone/Proj(J:)/Hoover/GIS/Hvr_onsite.apr layout: Bedrock GW (layout) 09/27/01

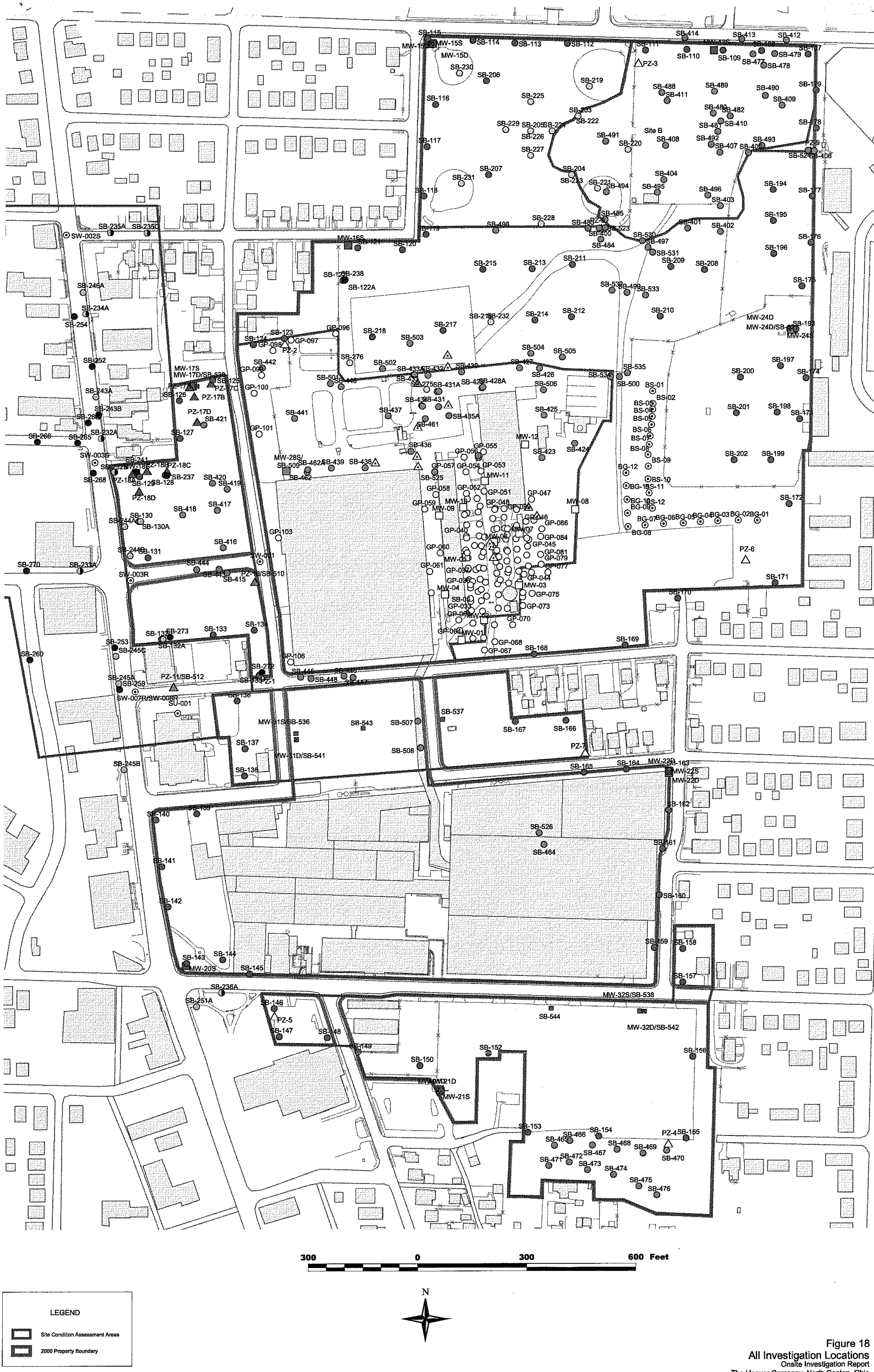


Figure 18
All Investigation Locations
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Antigone/Proj(J:)/Hoover/GIS/Hvr_onsite.apr layout: Figure 18- All Investigation Locations (layout) 09/27/01

CH2MHILL

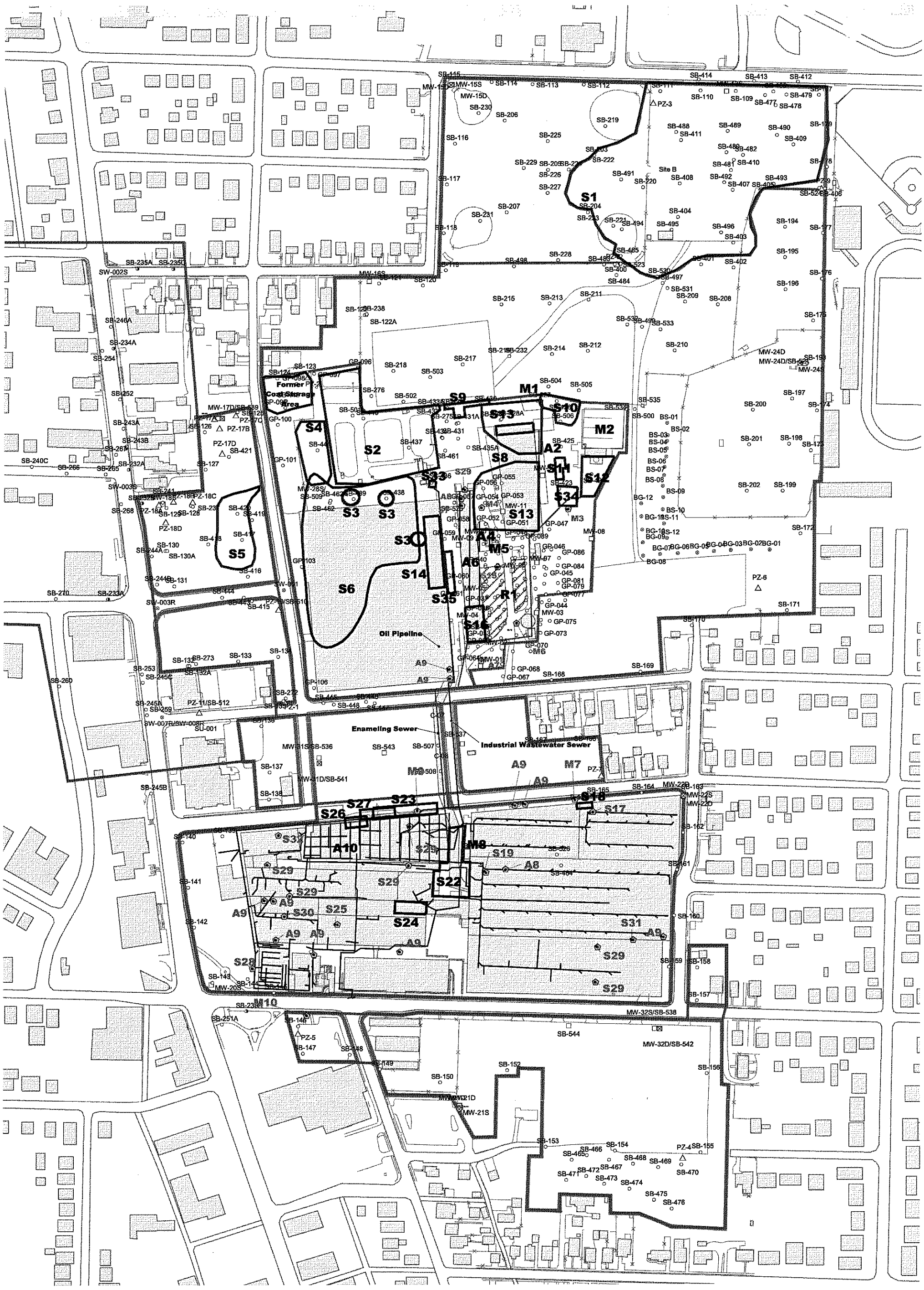
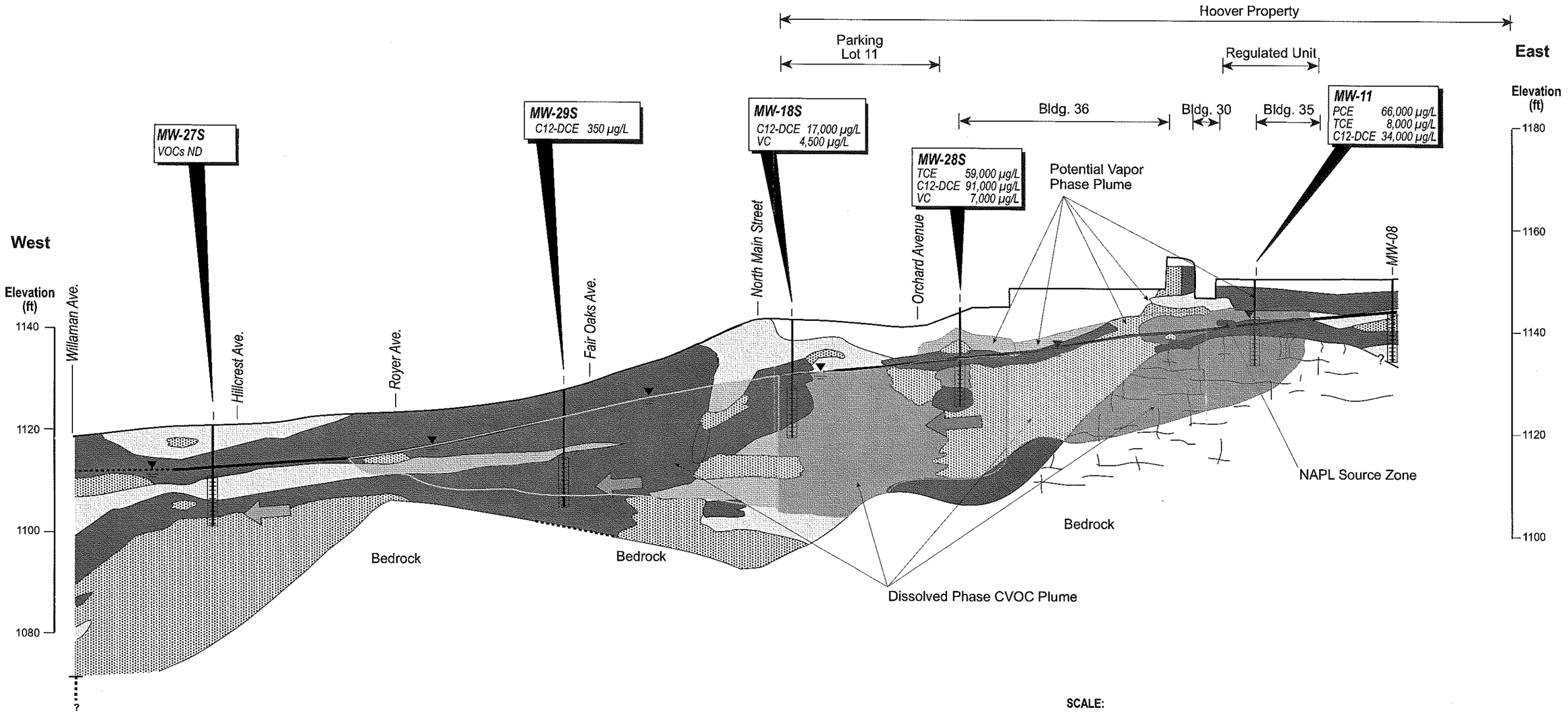


Figure 19
All Investigation Locations and SWMUs
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Antigone/Proj(J:)/Hoover/GIS/Hvr_onsite.apr layout: Figure 19 - All Investigation Locs and SWMUs (layout) 09/27/01

CH2MHILL



LEGEND

- Fill
- Coarse-Grained Deposits (sand, gravel, sand & gravel)
- Coarse-Grained Deposits with Fines (sand with silt/clay, gravel with silt/clay, sand/gravel with silt/clay)
- Fine-Grained Deposits (silt/clay, silt/clay with sand/gravel)
- Approximated Contact
- Monitoring Well or Piezometer Screened Interval
- Groundwater Elevation Based on May 2000 Groundwater Elevation Contour Map
- Inferred Groundwater Elevation based on extrapolated May 2000 Groundwater Contours or Boring Groundwater Observations
- Direction of Groundwater Flow Based on Apparent Gradient
- Dissolved Phase CVOC Plume
- Fractures

Groundwater Chemistry

CVOC	=	Chlorinated Volatile Organic Compounds
TCE	=	Trichloroethene
PCE	=	Tetrachloroethene
C12-DCE	=	cis-1,2-Dichloroethene
VC	=	Vinyl Chloride

SCALE:

1 inch = 20 feet (20, 10, 0)

1 inch = 200 feet (0, 100, 200)

(10 x vertical exaggeration)

NOTES:

1. Groundwater elevation differences between January and May 2000 are:
   - Regulated unit - 0.9 ft higher in May
   - Western parimeter - 0.6 ft higher in May
2. Groundwater data for SB-421, SB-438, SB-439, and SB-462A are not available as of 11-8-00.
3. There are no groundwater data for GP-004, GP-023, GP-040 and GP-080.

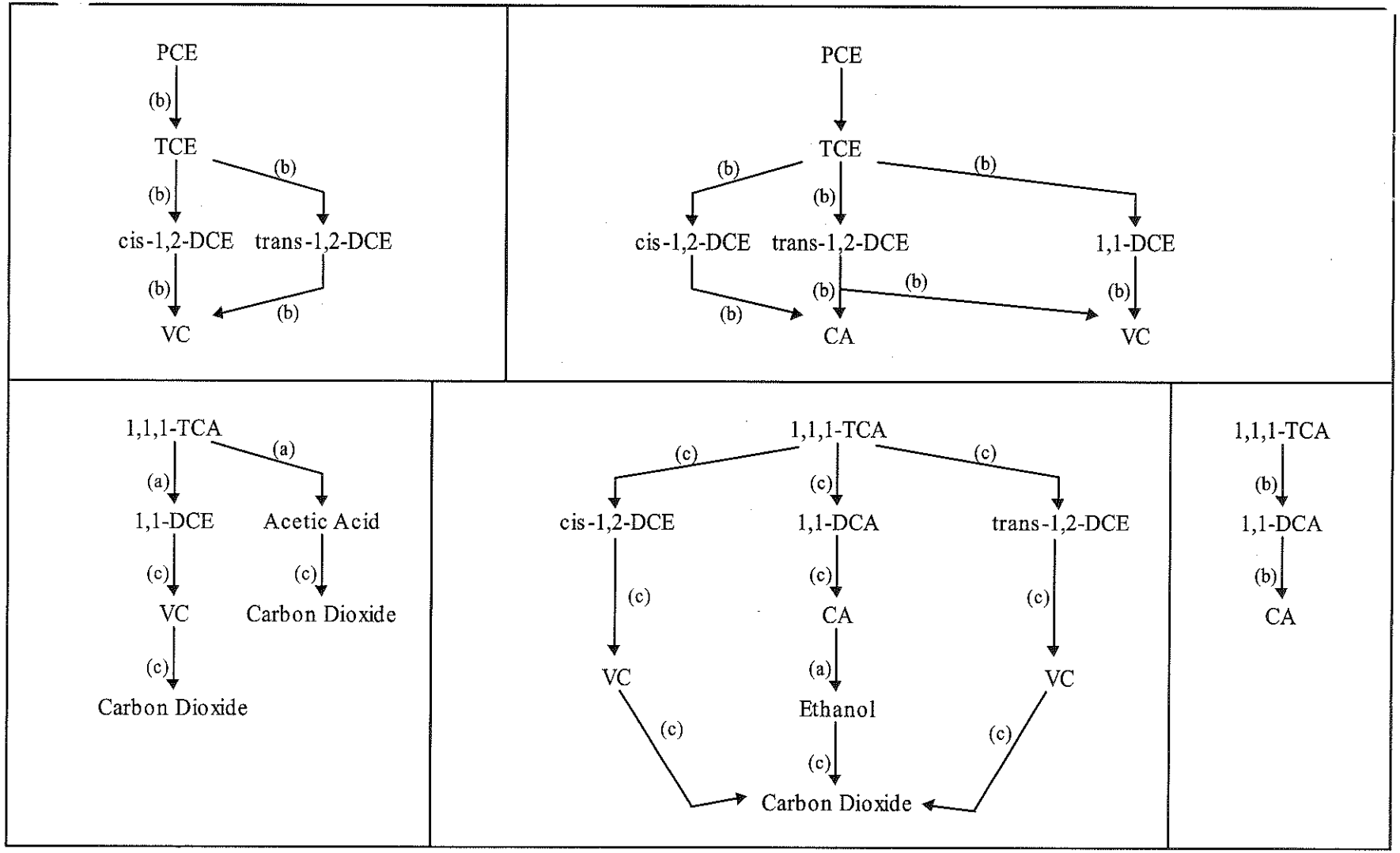
Figure 20

North Yard Conceptual Model

Onsite Investigation Report

The Hoover Company, North Canton, Ohio

CH2MHILL

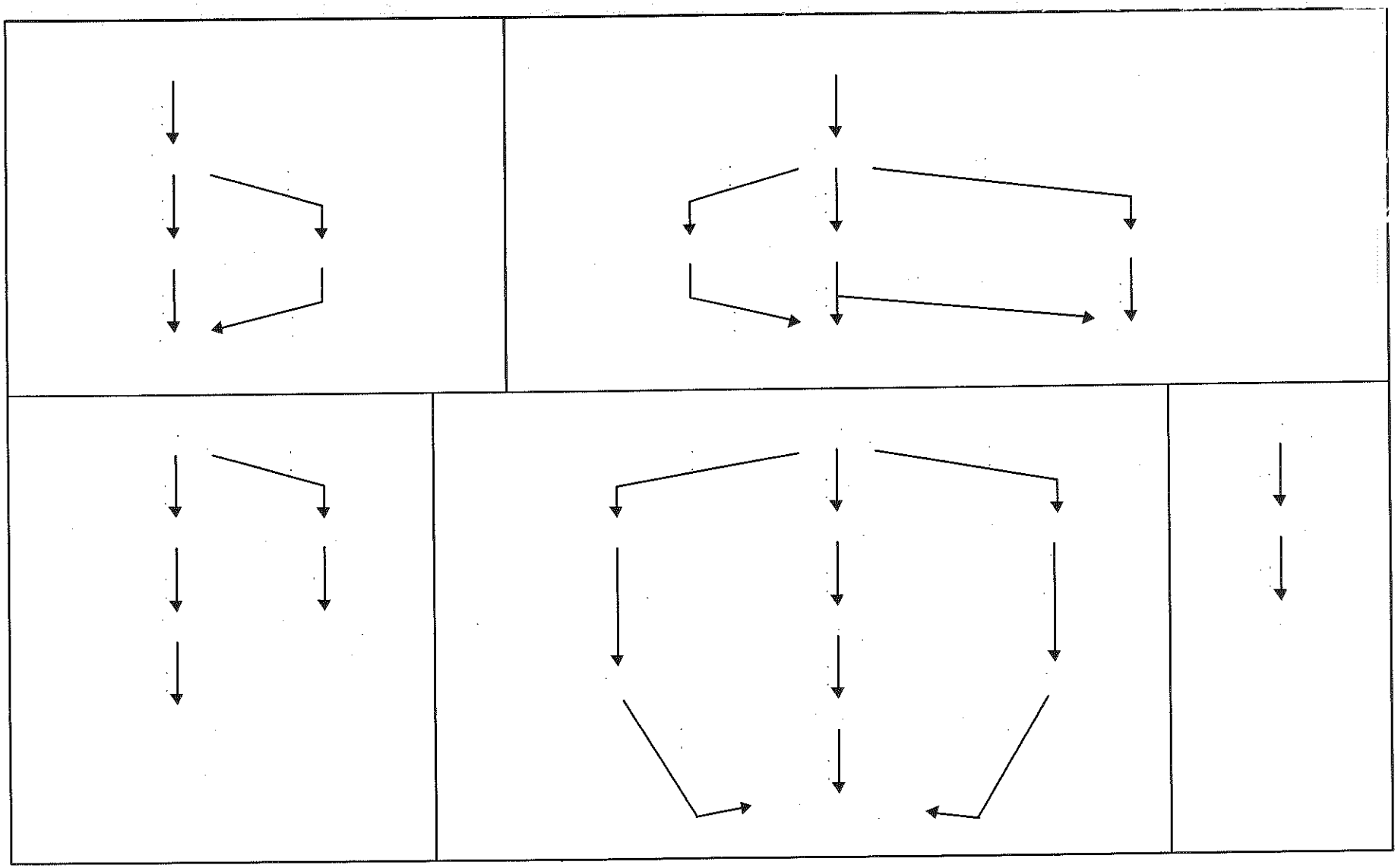


LEGEND

(a)	Aerobic Degradation Process	cis-1,2-DCE	cis-1,2-dichloroethene
(b)	Anaerobic Degradation Process	trans-1,2-DCE	trans-1,2-dichloroethene
(c)	Biodegradation Process	1,1-DCE	1,1-dichloroethene
PCE	tetrachloroethene	1,1-DCA	1,1-dichloroethane
TCE	trichloroethene	VC	vinyl chloride
1,1,1-TCA	1,1,1-trichloroethane	CA	chloroethane

Figure 21
Degradation of Chlorinated Volatile Organic Compounds
Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

(a)	Aerobic Degradation Process	cis-1,2-DCE	cis-1,2-dichloroethene
(b)	Anaerobic Degradation Process	trans-1,2-DCE	trans-1,2-dichloroethene
(c)	Biodegradation Process	1,1-DCE	1,1-dichloroethene
PCE	tetrachloroethene	1,1-DCA	1,1-dichloroethane
TCE	trichloroethene	VC	vinyl chloride
1,1,1-TCA	1,1,1-trichloroethane	CA	chloroethane

Figure 21

Degradation of Chlorinated Volatile Organic Compounds

Onsite Investigation Report

The Hoover Company, North Canton, Ohio

CH2MHILL

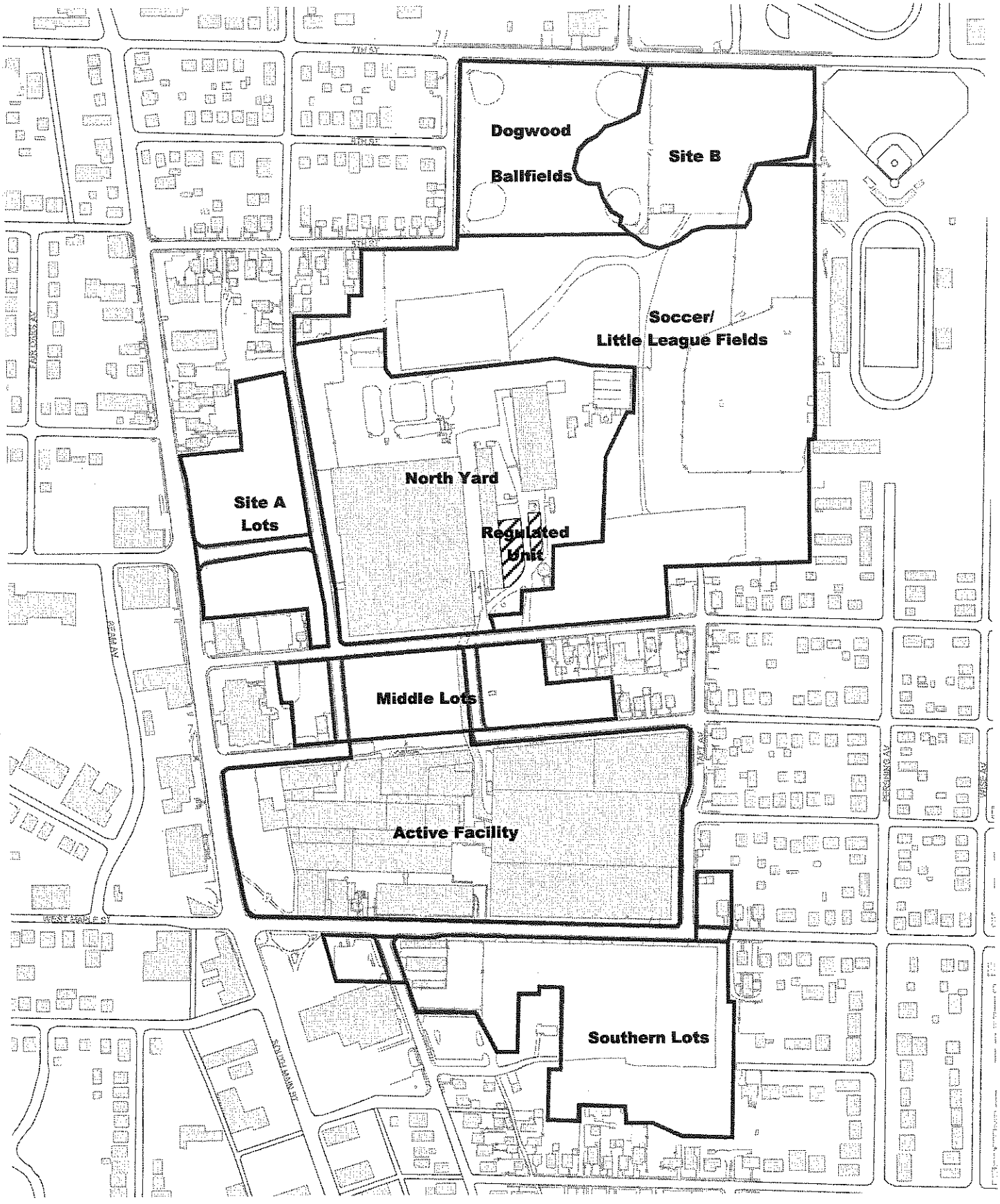


Figure 22
Site Map
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\allsitewide02.apr (Sitewide (Figure 02 layout).PDF) 25 Sep 2001 10:49 MPETERSHMKE

CH2MHILL

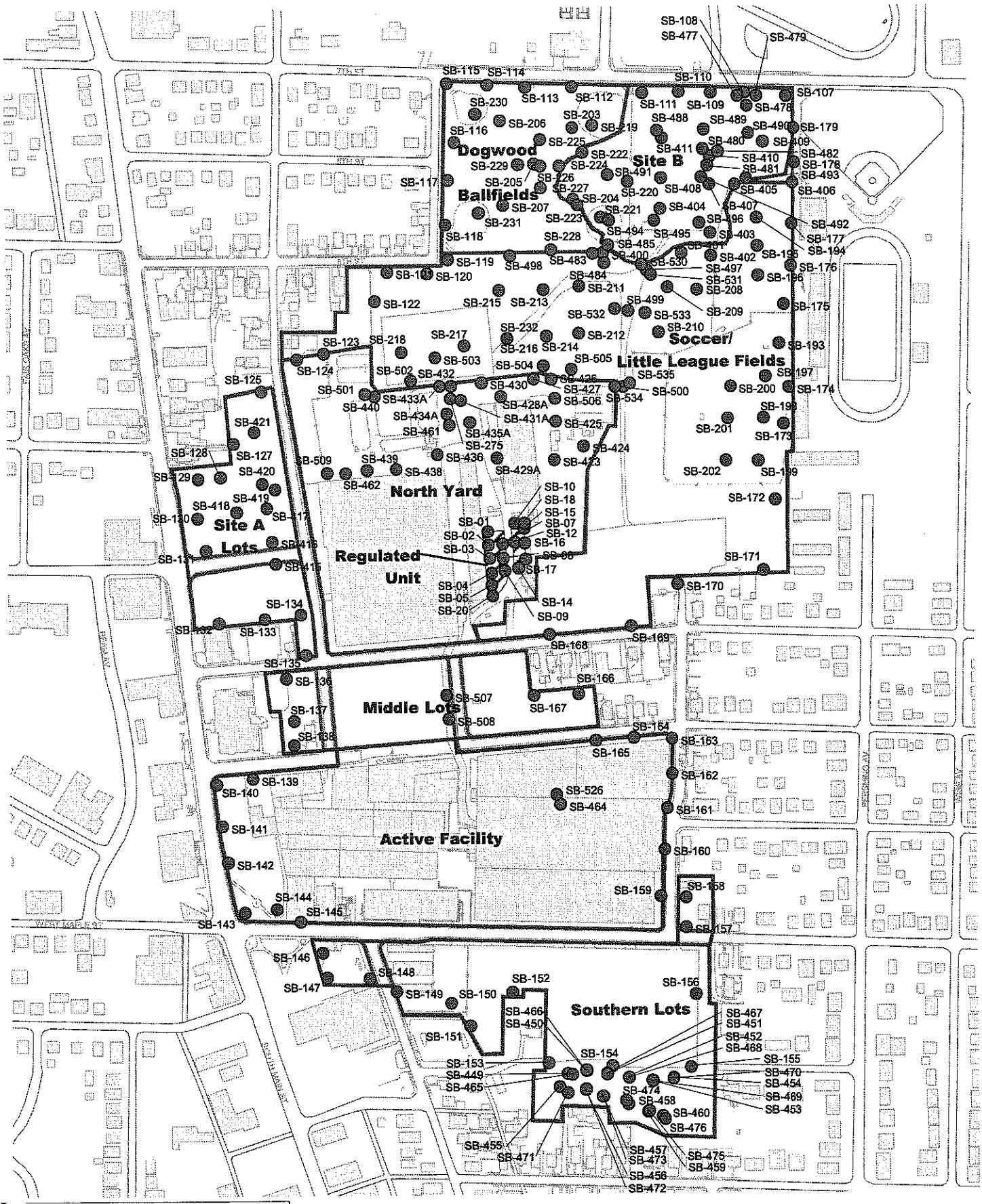


Figure 23
Surface Soil Sample Locations

Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\siteinfo02.apr (Fig. 23 - Surface Soil Sample Locations.PDF) 28 Sep 2001 11:05 MPETERSHMIKE

CH2MHILL

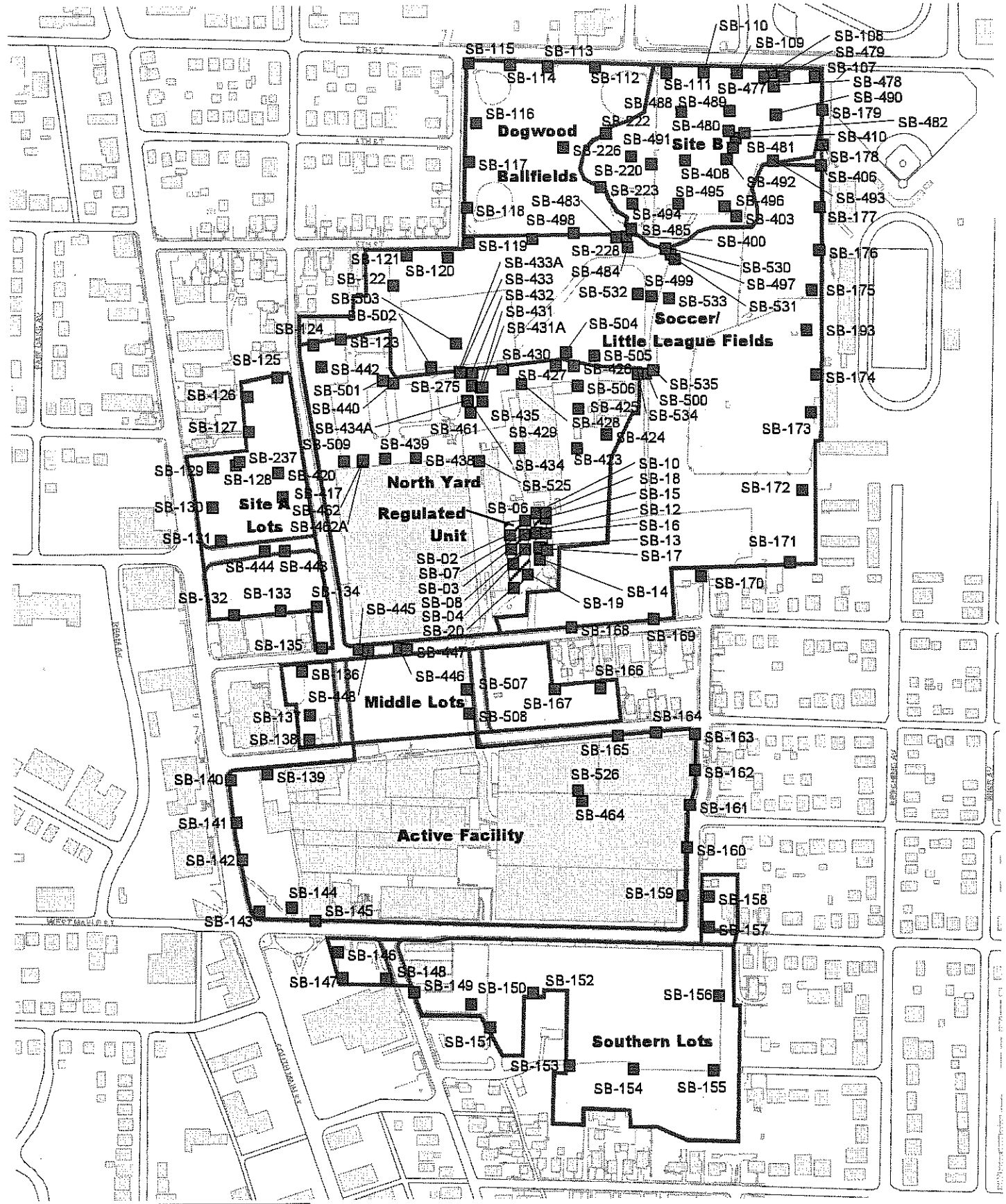


Figure 24
Subsurface Soil Sample Locations
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\szewede02.apr (Fig. 24 - Subsurface Soil Sample Locations.PDF) 25 Sep 2001 11:11 MPETERSHMIKE

CH2MHILL

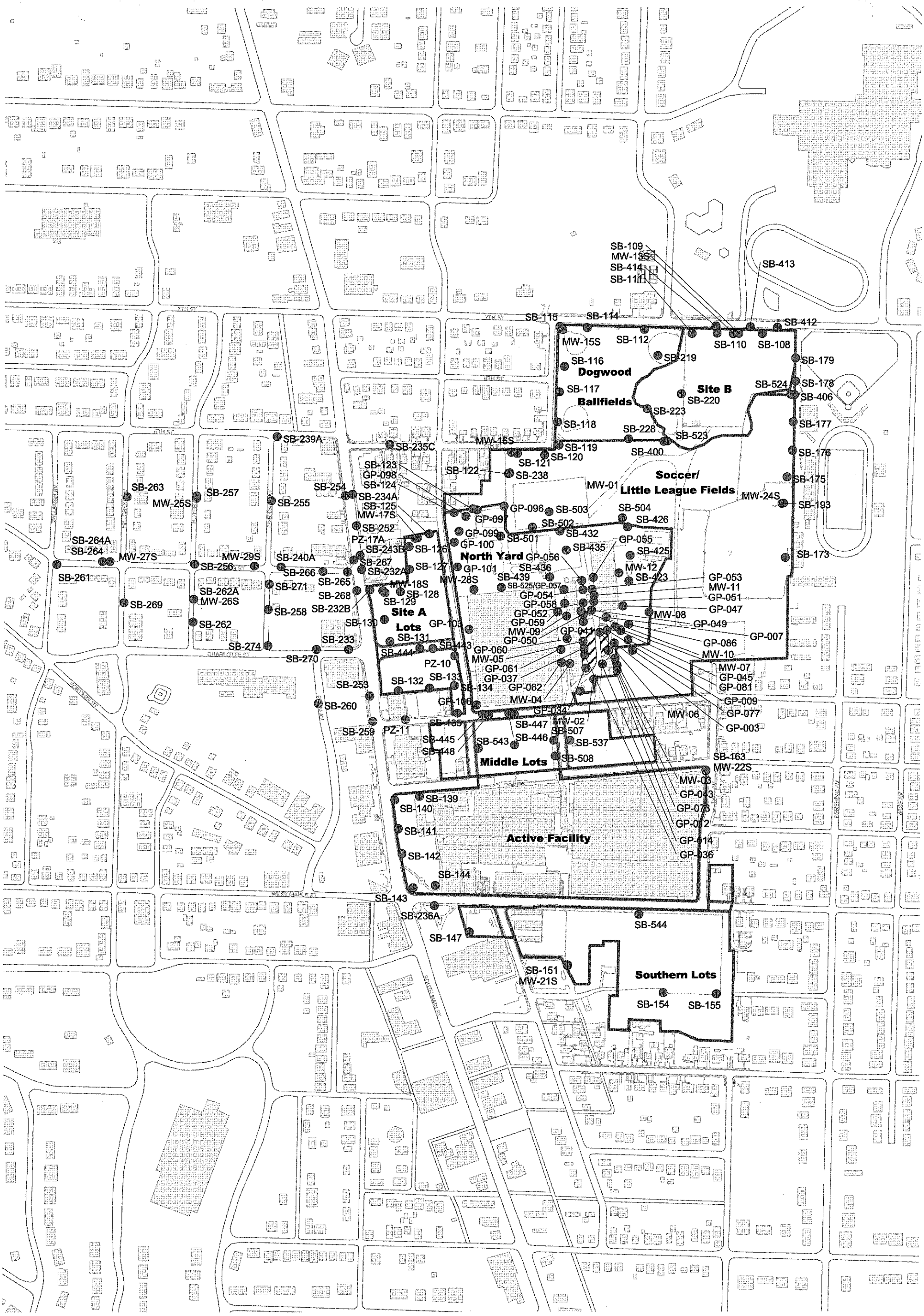


Figure 25
Shallow (Glacial) Groundwater Sampling Locations
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\sitewide02.apr (Fig. 25 - Shallow (Glacial) Well Locations.PDF) 28 Sep 2001 8:51 MPETERSHMKE

CH2MHILL

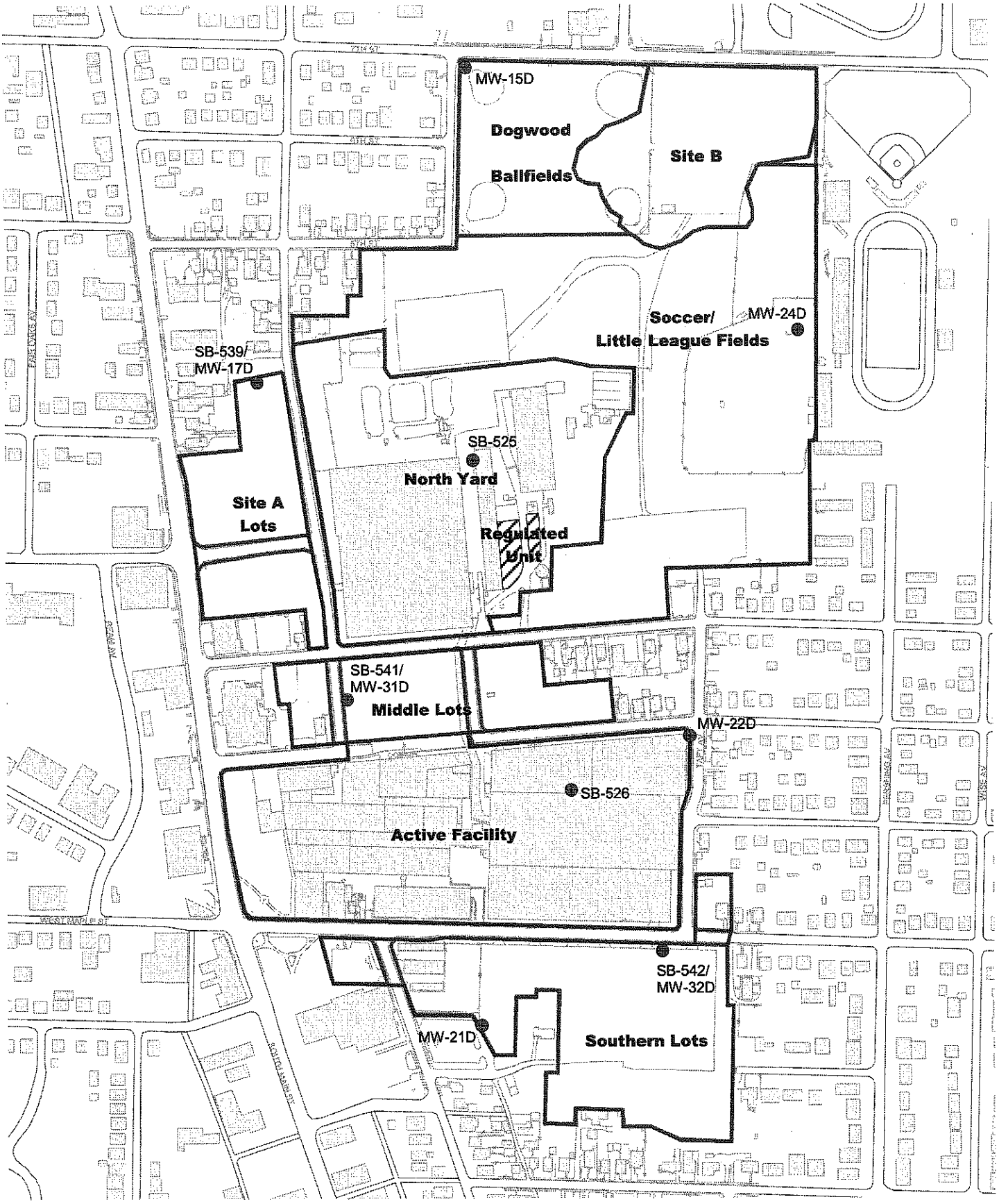
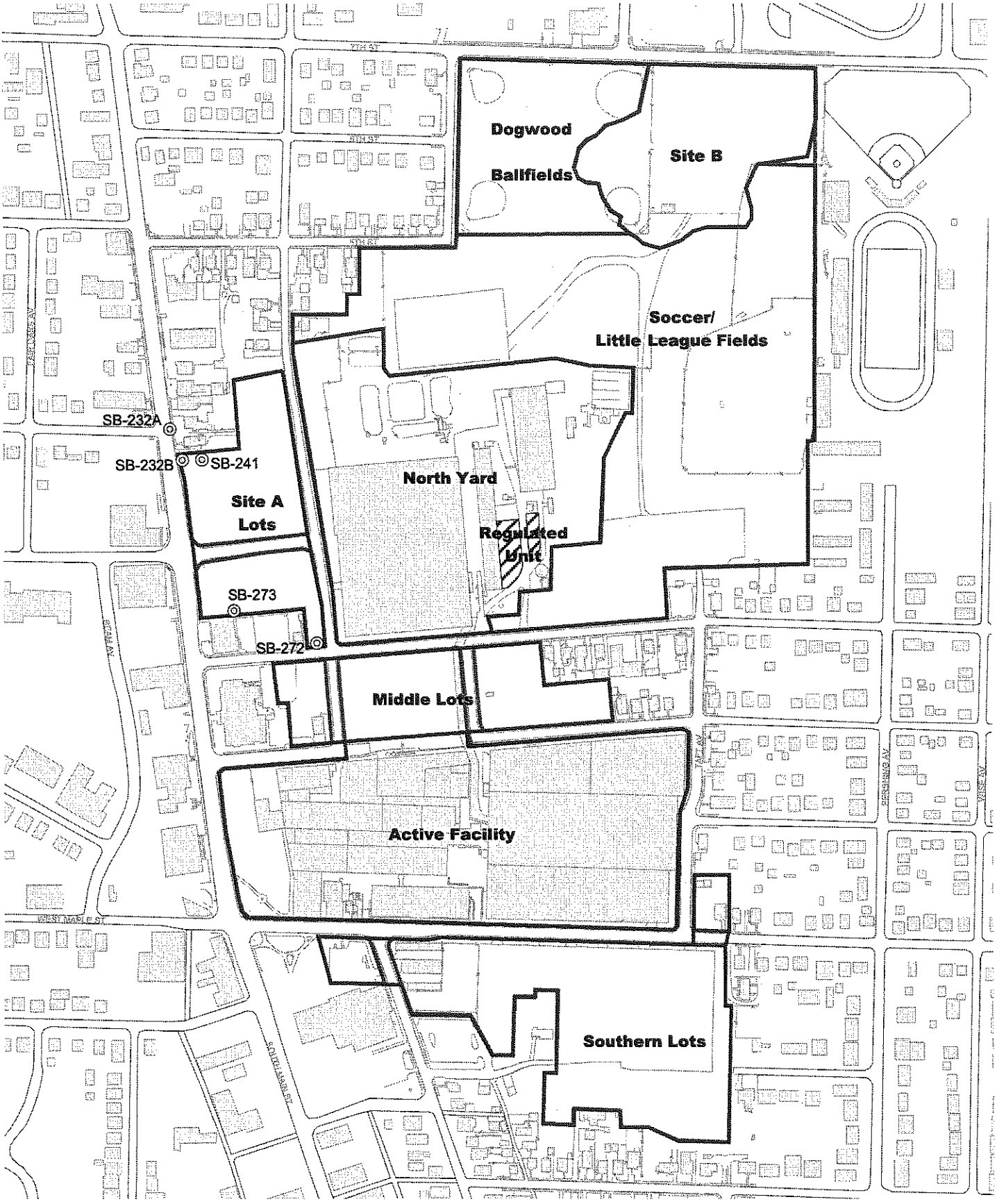


Figure 26
Deep (Bedrock) Groundwater Sampling Locations
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\sitewide02.apr (Fig. 26 - Deep Well Locations.PDF) 28 Sep 2001 8:48 MPETERSHMKE

CH2MHILL



NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\siteswide02.apr (Fig. 27 - Soil Vapor Sample Locations.PDF) 28 Sep 2001 13:53 MPETERSH/MKE

Figure 27
Soil Vapor Sample Locations
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

CH2MHILL

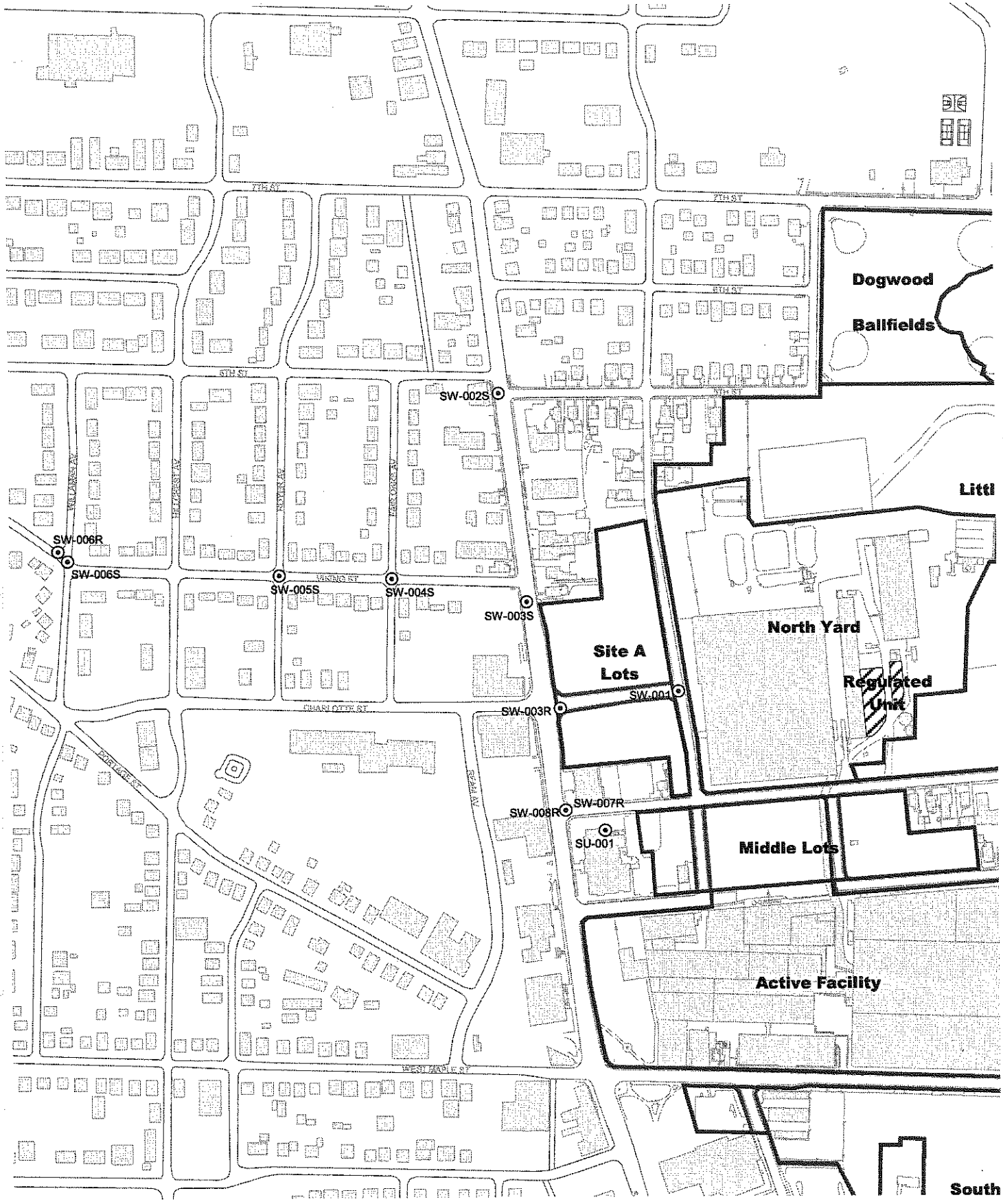
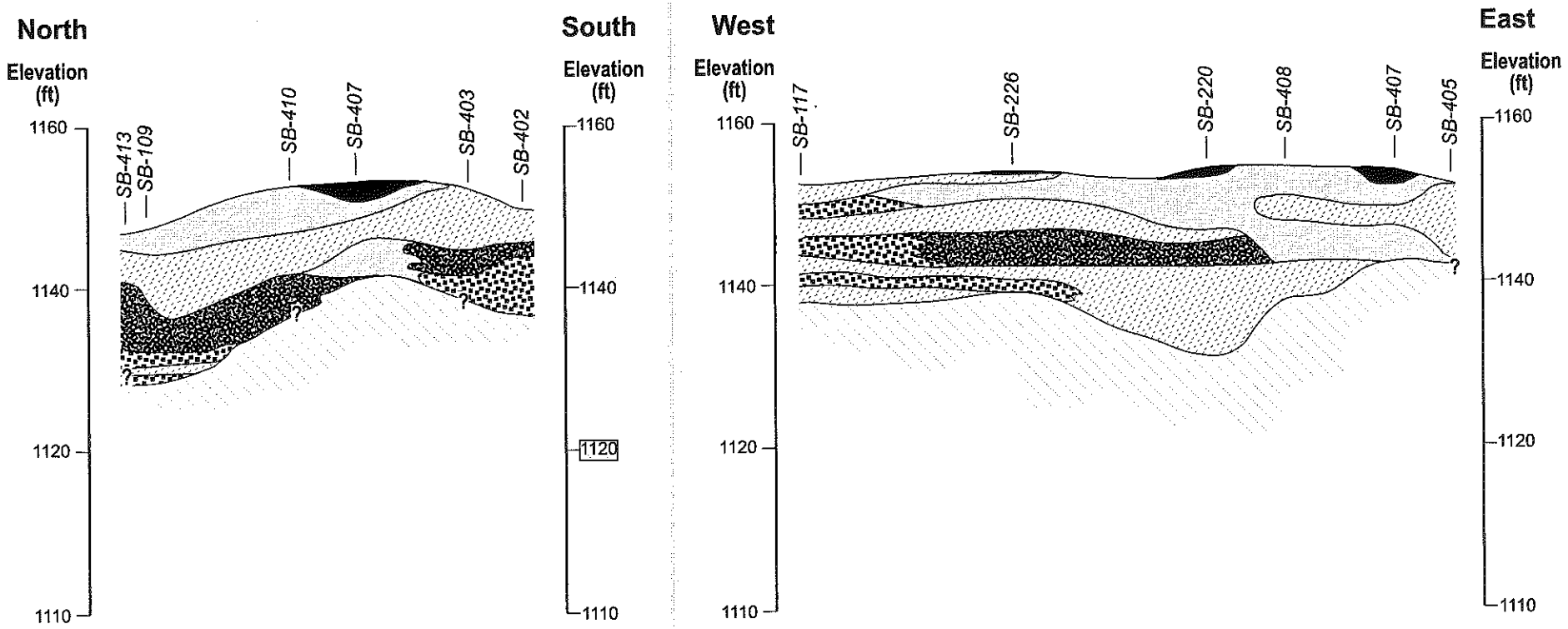


Figure 28
Sewer Sampling Locations
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\all\swkte02.apr (Fig. 28 - Sewer Sampling Locations.PDF) 26 Sep 2001 13:57 MPETERSHMKE

CH2MHILL



LEGEND

- Topsoil
- Fine-Grained
- Coarse-Grained
- Coarse-Grained with Fines
- Fill/Waste
- Bedrock

N

0 200

SCALE IN FEET

Figure 31

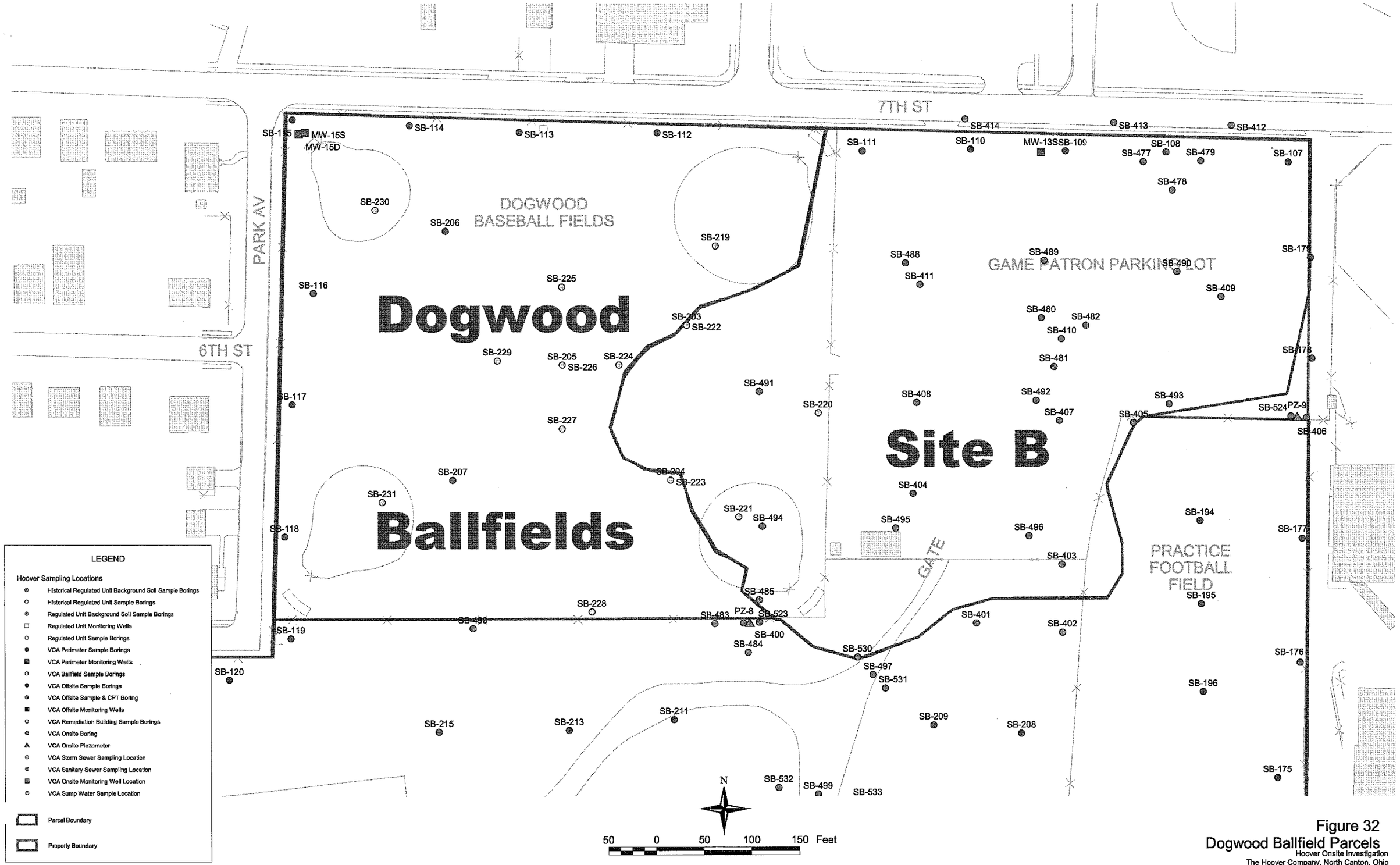
Site B

Fill Cross Sections

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

E092001003MKE(E155441.cl1.ar.03) SiteB_FillXSections.FH9 09-26-01am



LEGEND

Hoover Sampling Locations

- Historical Regulated Unit Background Soil Sample Borings
- Historical Regulated Unit Sample Borings
- Regulated Unit Background Soil Sample Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite Monitoring Wells
- VCA Remediation Building Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- VCA Storm Sewer Sampling Location
- VCA Sanitary Sewer Sampling Location
- VCA Onsite Monitoring Well Location
- VCA Sump Water Sample Location

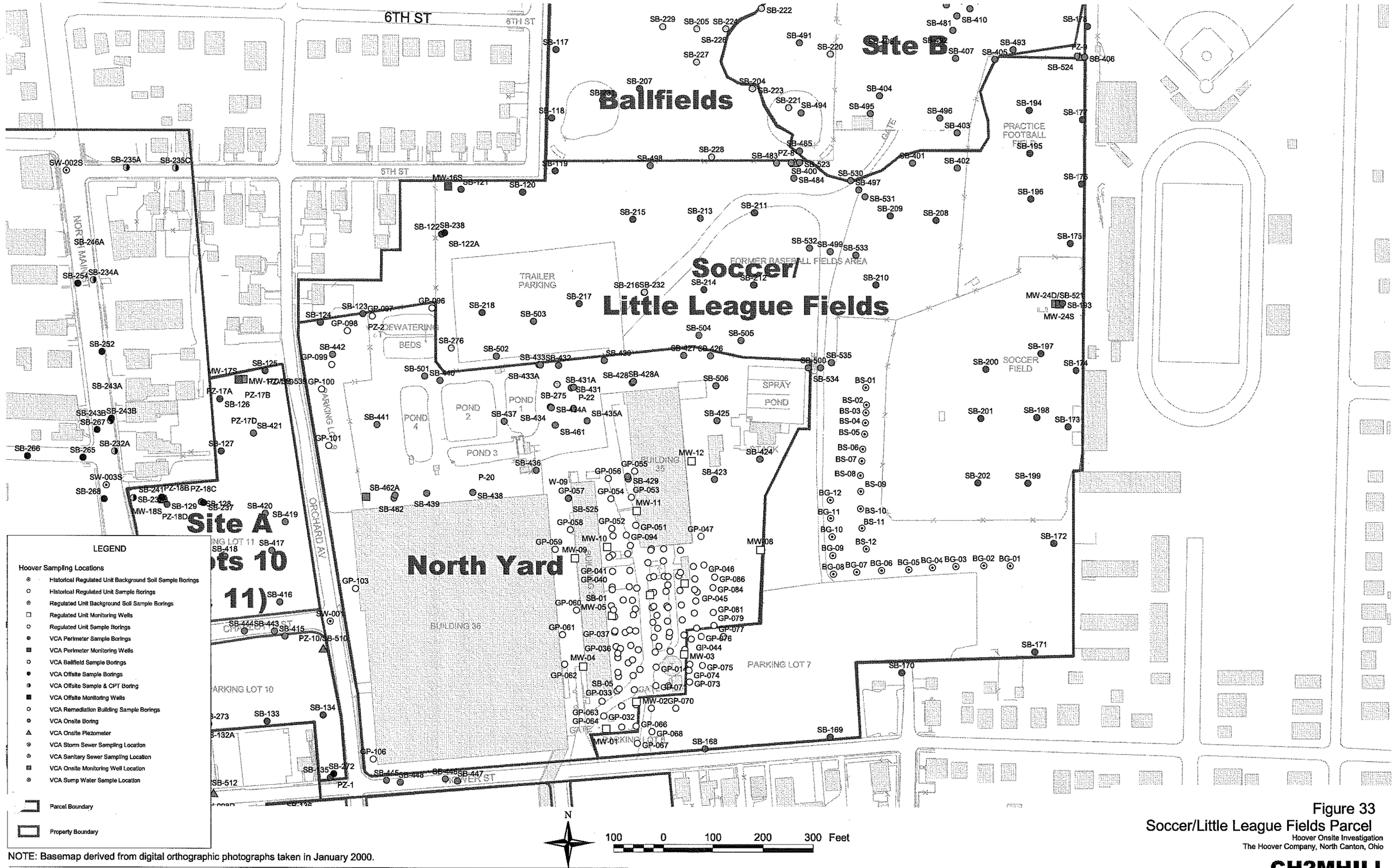
Parcel Boundary

Property Boundary

NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

Figure 32
Dogwood Ballfield Parcels
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

CH2MHILL

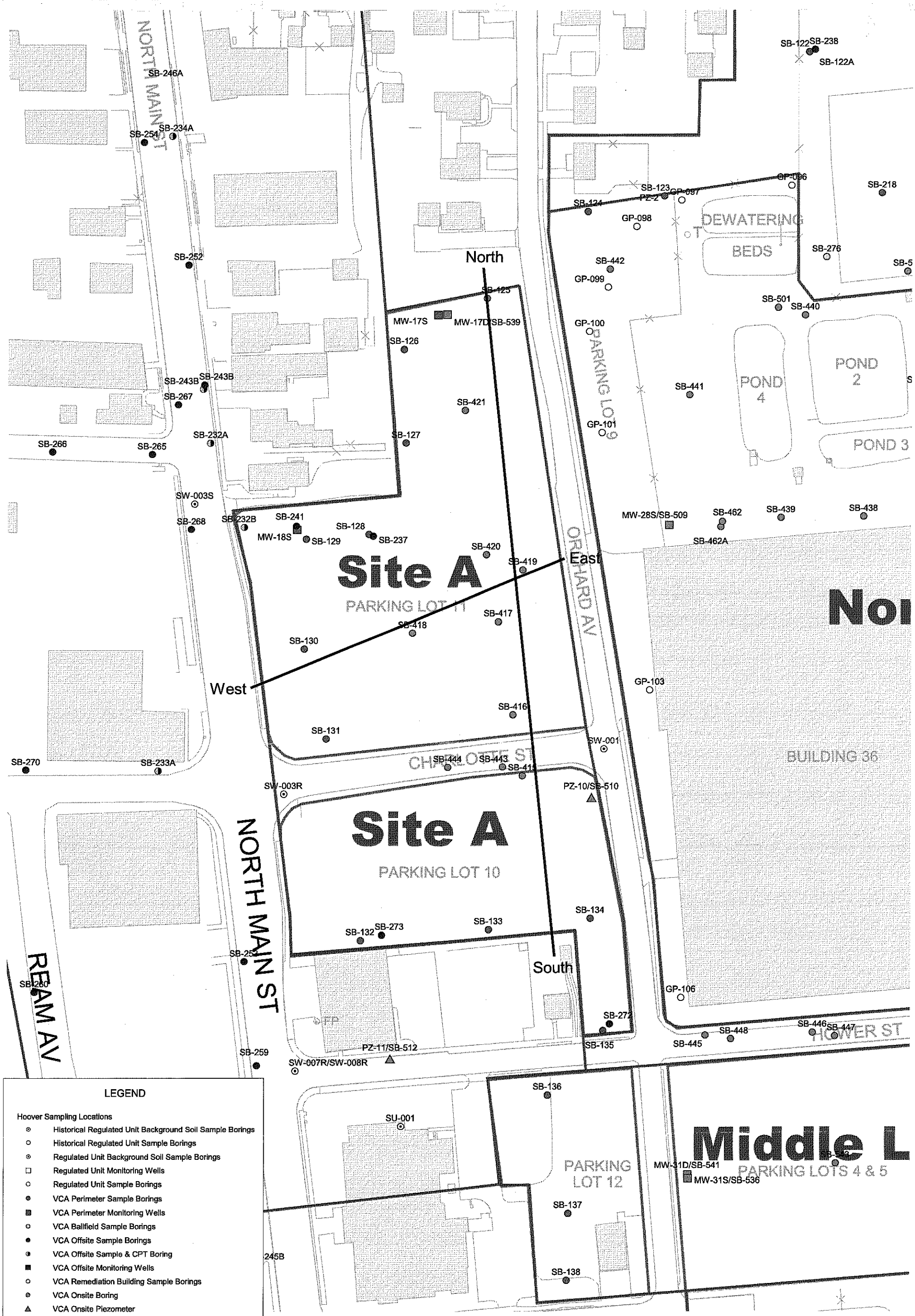


NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

Figure 33
Soccer/Little League Fields Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

CH2MHILL

d:\gis\hvr_risk02.apr (Fig. 33 - Soccer/LL Fields (layout).PDF) 26 Sep 2001 16:17 MPETERSH\MKE



LEGEND

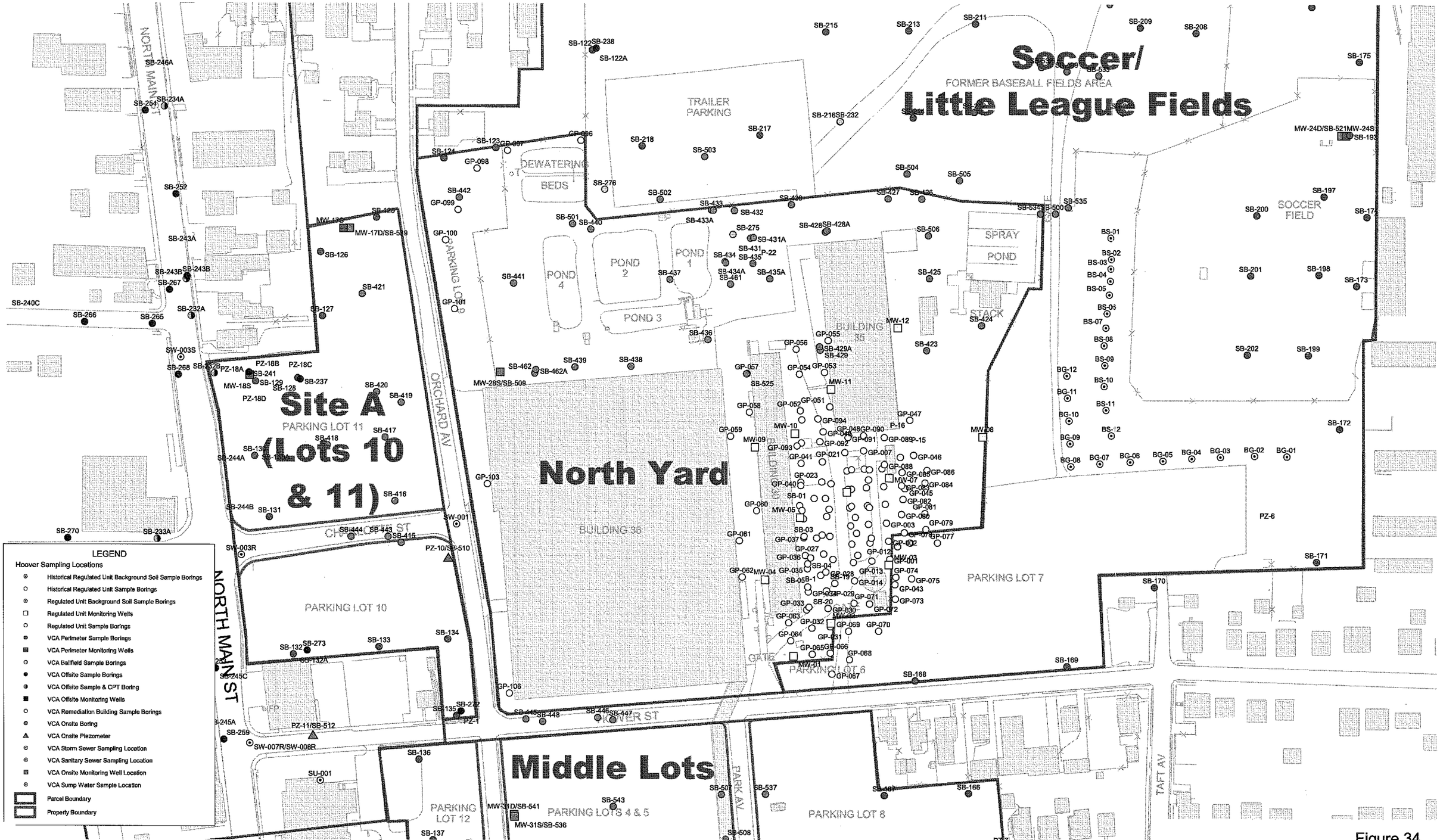
Hoover Sampling Locations

- Historical Regulated Unit Background Soil Sample Borings
- Historical Regulated Unit Sample Borings
- Regulated Unit Background Soil Sample Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite Monitoring Wells
- VCA Remediation Building Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- VCA Storm Sewer Sampling Location
- VCA Sanitary Sewer Sampling Location
- VCA Onsite Monitoring Well Location
- VCA Sump Water Sample Location
- Cross-section
- Parcel Boundary
- Property Boundary

Figure 35
Site A Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

CH2MHILL

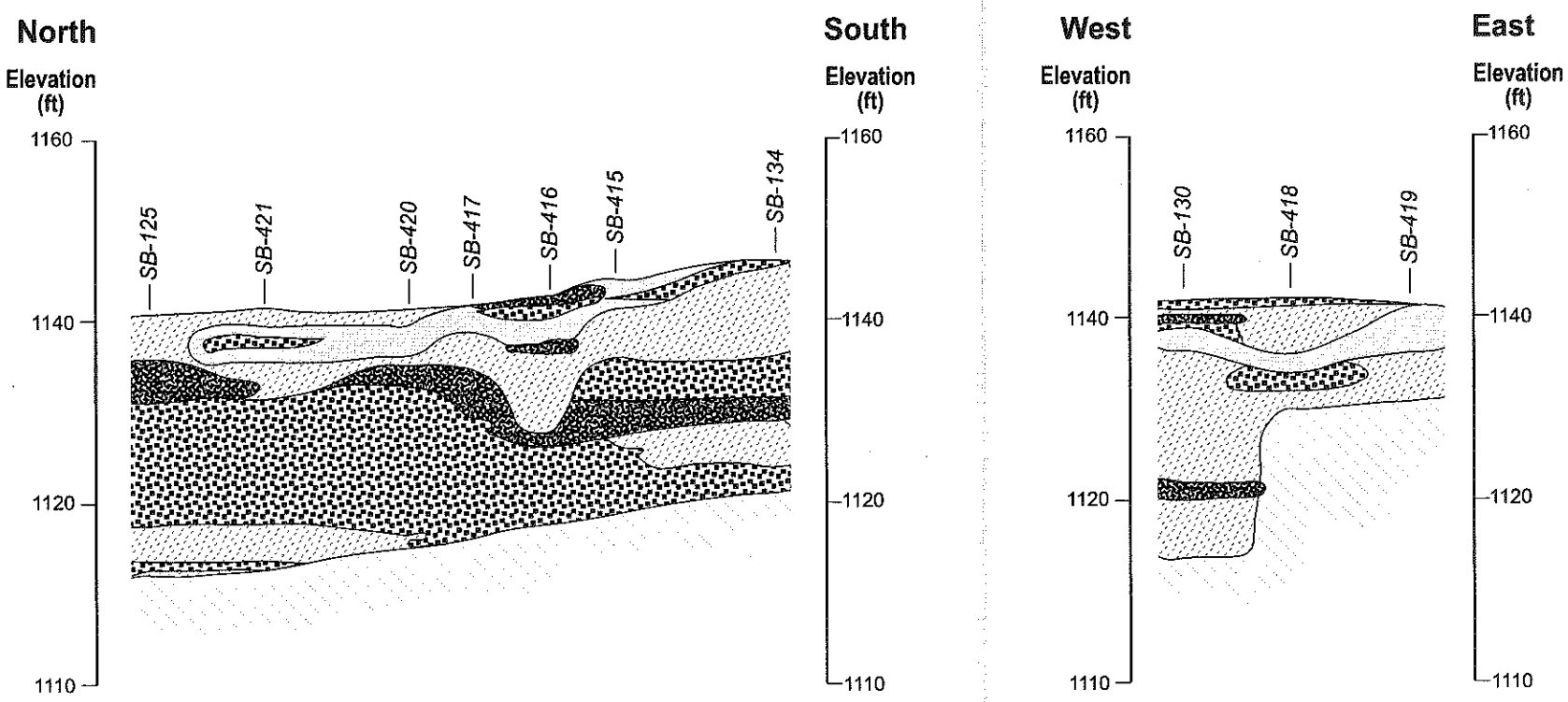


NOTES: Basemap derived from digital orthographic photographs taken in January 2000.

See Technical Report: *RCRA Unit Geoprobe Soil and Groundwater Sampling for The Hoover Company, North Canton, Ohio* (Ch2m Hill, 1999) for Regulated Unit Sampling Station Labels

Figure 34
North Yard Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

- Topsoil
- Fine-Grained
- Coarse-Grained
- Coarse-Grained with Fines
- Fill/Waste
- Bedrock

N

0 200

SCALE IN FEET

Figure 36

Site A

Lots Fill Cross Sections

Onsite Investigation Report
The Hoover Company, North Canton, Ohio

CH2MHILL

Middle Lots

Active Facility

HEADQUARTERS AND MAIN PLANT AREA

BUILDING 36

PARKING LOT 10

PARKING LOT 7

PARKING LOT 6

PARKING LOT 12

PARKING LOTS 4 & 5

PARKING LOT 8

GATE

NORTH MAIN ST

CHARLOTTE ST

HOOVER ST

PARK AV

TAFT AV

SW-003R

SB-444

SB-443

SB-415

PZ-10/SB-510

SB-134

SB-132

SB-273

SB-133

SB-259

SB-135

SB-272

FP

PZ-11/SB-512

SW-007R/SW-008R

SB-136

SU-001

SB-137

SB-138

SB-139

GP-106

SB-445

SB-448

SB-446

SB-447

SB-543

MW-31D/SB-541

MW-31S/SB-536

SB-507

SB-508

SB-537

SB-167

SB-166

SB-165

SB-164

MW-22S

MW-22D

SB-163

SB-162

SB-526

SB-464

SB-161

SB-160

GP-061

GP-062

MW-04

GP-038

GP-025

P-25

GP-011

GP-003

GP-079

SB-03

B-2

SB-17

GP-078

GP-077

GP-037

GP-016

GP-012

GP-002

GP-076

GP-036

SB-14

GP-044

GP-001

MW-03

GP-035

GP-013

GP-075

SB-05

GP-014

GP-043

SB-20

GP-072

GP-073

GP-033

MW-02

GP-032

GP-069

GP-070

GP-063

GP-031

GP-064

GP-066

MW-01

GP-068

GP-065

GP-067

SB-170

SB-169

SB-168

LEGEND

Hoover Sampling Locations

- Historical Regulated Unit Background Soil Sample Borings
- Historical Regulated Unit Sample Borings
- Regulated Unit Background Soil Sample Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite Monitoring Wells
- VCA Remediation Building Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- VCA Storm Sewer Sampling Location
- VCA Sanitary Sewer Sampling Location
- VCA Onsite Monitoring Well Location
- VCA Sump Water Sample Location

Parcel Boundary

Property Boundary

N

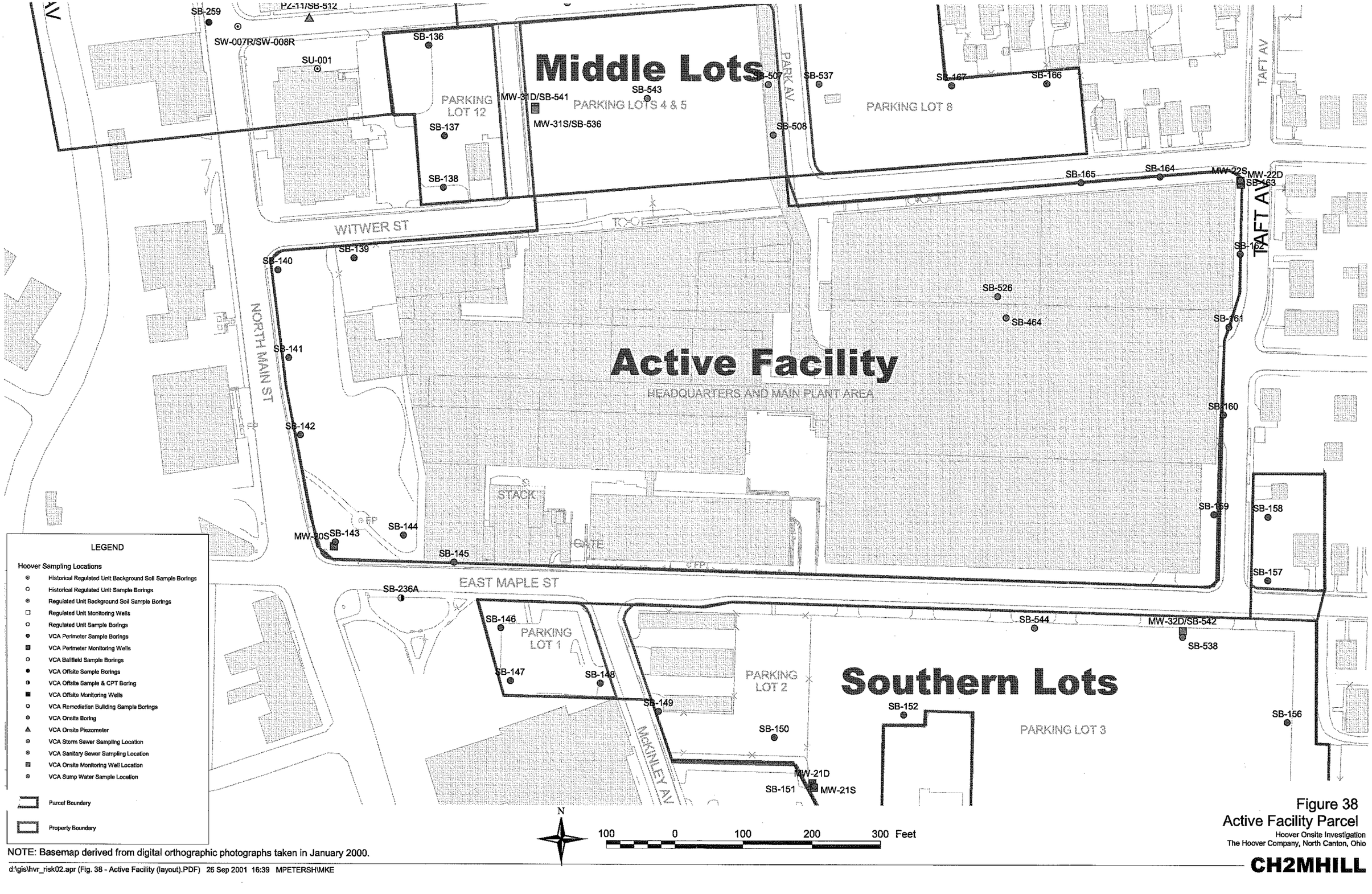
100 0 100 200 Feet

NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

d:\gis\hvr_risk02.apr (Fig. 37 - Middle Lots (layout).PDF) 26 Sep 2001 16:35 MPETERSH\MKE

Figure 37
Middle Lots Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

CH2MHILL



NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

Figure 38
Active Facility Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

Southern Lots

STACK
GATE
FP
I43
SB-144
SB-145
EAST MAPLE ST
SB-236A
SB-146
PARKING LOT 1
SB-147
SB-148
SB-149
PARKING LOT 2
SB-150
MW-21D
MW-21S
SB-151
MCKINLEY AVE
SOUTH M
PARKING
HARTMAN ST
SB-152
PARKING LOT 3
SB-153
SB-154
SB-155
SB-156
SB-157
SB-158
SB-159
SB-544
MW-32D/SB-542
SB-538
SB-465
SB-466
SB-467
SB-468
SB-469
SB-470
SB-471
SB-472
SB-473
SB-474
SB-475
SB-476

LEGEND

Hoover Sampling Locations

- Historical Regulated Unit Background Soil Sample Borings
- Historical Regulated Unit Sample Borings
- Regulated Unit Background Soil Sample Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite Monitoring Wells
- VCA Remediation Building Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- VCA Storm Sewer Sampling Location
- VCA Sanitary Sewer Sampling Location
- VCA Onsite Monitoring Well Location
- VCA Sump Water Sample Location

Parcel Boundary

Property Boundary

N

100 0 100 200 Feet

NOTE: Basemap derived from digital orthographic photographs taken in January 2000.

Figure 39
Southern Lots Parcel
Hoover Onsite Investigation
The Hoover Company, North Canton, Ohio

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Appendix A

APPENDIX A

Introduction

Groundwater and soils sample results greater than target levels are present in this appendix and used throughout the report to delineate the nature and extent of compounds of interest. Target levels are based upon risk and exceedances indicate that further evaluation may be needed to determine if remediation may be necessary. If, after further evaluation, it is determine that significant risk to human health or the environment is present, cleanup levels may be developed to guide the selection and implementation of potential remedies. Development of cleanup levels was not part of the Onsite Investigation evaluation.

Of 4988 COI detected in water samples collected onsite, only 259 or 5% exceeded target levels. In soils 9403 COI were detected onsite while only 192 or 2% exceeded target levels.

Data results reported in these tables are in units of ug/L for water, or ug/Kg for soils, which are the equivalent of 1 part-per-billion. To put the units into perspective 1 part-per-billion is equal to approximately 1 drop in a 13,000 gallon average backyard swimming pool.

Primary and secondary laboratory data qualifiers are listed in the Appendix A Tables. Primary qualifiers identify how the data may be used. Secondary qualifiers are used to identify why the primary qualifier was applied. Only data qualified as estimated (J) or acceptable (=) are presented in the tables.

Primary Qualifiers

J Estimated. The analyte was detected, but the reported concentration is considered an estimate and may not be accurate or precise. This flag is an indicator of a quality control problem.

= No qualifier is applied, then the analytical result is considered to be valid and usable as reported. No quality control problem is indicated.

Secondary Qualifiers

SS Surrogate spike results are outside of control limits

IS Internal standard results are outside of control limits

CC Continuing calibration check outside of control limits

FD Field duplicate results are outside of control limits

SD Serial dilution results are outside of control limits

LS Laboratory spike results are outside of control limits

MS Matrix Spike results are outside of control limits

IC Initial calibration control check was outside of control limits

Additional information regarding the application of data qualifiers may be found in the Onsite Investigation Data Quality Evaluation Data Package.

TABLE A-1
Soil Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/Kg	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
SB-400	0	1	PCBs	PCB-1248 (Arochlor 1248)	33	5100	J FD	HVRSB400-1000SN0001	10/6/00
SB-400	3	5	PCBs	PCB-1248 (Arochlor 1248)	33	1200	J FD	HVRSB400-1000SN0305	10/6/00
SB-400	3	5	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	46000	64000	=	HVRSB400-1000SN0305	10/6/00
SB-400	5	7	PCBs	PCB-1248 (Arochlor 1248)	33	59	J FD	HVRSB400-1000SN0507	10/6/00
SB-400	7	9	PCBs	PCB-1248 (Arochlor 1248)	33	240	J FD	HVRSB400-1000SN0709	10/6/00
SB-408	1	3	Semi-Volatiles	Benzo(a)Pyrene	330	590	=	HVRSB408-1000SN0103	10/12/00
SB-408	1	3	Semi-Volatiles	Benzo(g,h,i)Perylene	330	340	=	HVRSB408-1000SN0103	10/12/00
SB-408	1	3	Semi-Volatiles	Phenanthrene	330	920	J CC	HVRSB408-1000SN0103	10/12/00
SB-408	3	5	PCBs	PCB-1248 (Arochlor 1248)	33	450	=	HVRSB408-1000SN0305	10/12/00
SB-408	5	7	PCBs	PCB-1248 (Arochlor 1248)	33	1200	=	HVRSB408-1000SN0507	10/12/00
SB-409	0	1	PCBs	PCB-1248 (Arochlor 1248)	33	78	=	HVRSB409-1000SN0001	10/10/00
SB-410	1	3	PCBs	PCB-1248 (Arochlor 1248)	33	33000	=	HVRSB410-1000SN0103	10/9/00
SB-410	3	5	PCBs	PCB-1248 (Arochlor 1248)	33	52000	=	HVRSB410-1000SN0305	10/9/00
SB-410	3	5	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	46000	71000	=	HVRSB410-1000SN0305	10/9/00
SB-410	3	5	Total Metals	Lead	400000	15400000	=	HVRSB410-1000SN0305	10/9/00
SB-410	3	5	Total Metals	Zinc	23000000	55100000	J SD	HVRSB410-1000SN0305	10/9/00
SB-410	5	7	PCBs	PCB-1248 (Arochlor 1248)	33	62000	=	HVRSB410-1000SN0507	10/9/00
SB-410	5	7	Semi-Volatiles	Benzo(a)Anthracene	900	2300	=	HVRSB410-1000SN0507	10/9/00
SB-410	5	7	Semi-Volatiles	Phenanthrene	330	4700	=	HVRSB410-1000SN0507	10/9/00
SB-410	5	7	Total Metals	Cadmium	78000	111000	=	HVRSB410-1000SN0507	10/9/00
SB-410	7	9	PCBs	PCB-1248 (Arochlor 1248)	33	12000	=	HVRSB410-1000SN0709	10/9/00
SB-410	9	11	PCBs	PCB-1248 (Arochlor 1248)	33	7600	=	HVRSB410-1000SN0911	10/9/00
SB-416	0	1	PCBs	PCB-1248 (Arochlor 1248)	33	550	=	HVRSB416-1000SN0001	10/10/00
SB-417	3	5	Semi-Volatiles	Benzo(a)Pyrene	330	530	=	HVRSB417-1000SN0305	10/11/00
SB-417	3	5	Semi-Volatiles	Benzo(g,h,i)Perylene	330	340	=	HVRSB417-1000SN0305	10/11/00
SB-417	5	7	Semi-Volatiles	Benzo(a)Anthracene	900	1000	=	HVRSB417-1000SN0507	10/11/00
SB-417	5	7	Semi-Volatiles	Benzo(a)Pyrene	330	750	=	HVRSB417-1000SN0507	10/11/00
SB-417	5	7	Semi-Volatiles	Benzo(g,h,i)Perylene	330	360	=	HVRSB417-1000SN0507	10/11/00
SB-417	5	7	Semi-Volatiles	Phenanthrene	330	650	=	HVRSB417-1000SN0507	10/11/00
SB-419	0	1	PCBs	PCB-1248 (Arochlor 1248)	33	270	=	HVRSB419-1000SN0001	10/12/00
SB-420	1	3	Total Metals	Copper	2784000	3970000	J MS	HVRSB420-1000SN0103	10/12/00
SB-420	1	3	Total Metals	Lead	400000	1230000	J MS	HVRSB420-1000SN0103	10/12/00
SB-420	1	3	Total Metals	Zinc	23000000	77100000	J MS	HVRSB420-1000SN0103	10/12/00
SB-420	1	3	Volatiles	Trichloroethene	5000	5700	=	HVRSB420-1000SN0103	10/12/00
SB-424	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	76	=	HVRSB424-1000SN0204	10/16/00
SB-424	2	4	Semi-Volatiles	Benzo(a)Anthracene	900	910	=	HVRSB424-1000SN0204	10/16/00
SB-424	2	4	Semi-Volatiles	Benzo(a)Pyrene	330	930	=	HVRSB424-1000SN0204	10/16/00
SB-424	2	4	Semi-Volatiles	Benzo(b)Fluoranthene	900	980	=	HVRSB424-1000SN0204	10/16/00
SB-424	2	4	Semi-Volatiles	Benzo(g,h,i)Perylene	330	540	=	HVRSB424-1000SN0204	10/16/00
SB-424	2	4	Semi-Volatiles	Phenanthrene	330	920	=	HVRSB424-1000SN0204	10/16/00
SB-425	0	2	PCBs	PCB-1260 (Arochlor 1260)	33	630	=	HVRSB425-1000SN0002	10/13/00
SB-425	0	2	Pesticides	Endrin Aldehyde	1.7	25	=	HVRSB425-1000SN0002	10/13/00
SB-425	0	2	Total Metals	Arsenic	13000	21300	=	HVRSB425-1000SN0002	10/13/00
SB-425	2	4	Semi-Volatiles	2-Methylnaphthalene	330	490	=	HVRSB425-1000SN0204	10/13/00
SB-425	2	4	Total Metals	Arsenic	13000	26900	=	HVRSB425-1000SN0204	10/13/00
SB-425	2	4	Total Metals	Tin	10000	60000	J MS	HVRSB425-1000SN0204	10/13/00
SB-426	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	65000	=	HVRSB426-1000SN0002	10/11/00
SB-426	0	2	Total Metals	Copper	2784000	5090000	J MS	HVRSB426-1000SN0002	10/11/00
SB-426	0	2	Total Metals	Lead	400000	7490000	J MS	HVRSB426-1000SN0002	10/11/00
SB-426	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	550	=	HVRSB426-1000SN0204	10/11/00
SB-426	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	20000	=	HVRSB426-1000SN0406	10/11/00
SB-427	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	190	=	HVRSB427-1000SN0002	10/12/00
SB-427	0	2	Volatiles	Trichloroethene	5000	5600	=	HVRSB427-1000SN0002	10/12/00
SB-427	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	510	=	HVRSB427-1000SN0204	10/12/00
SB-428A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	170	=	HVRSB428A-1000SN0002	10/29/00
SB-429	1.5	3.5	PCBs	PCB-1242 (Arochlor 1242)	33	43	=	HVRSB429-1000SN1.53.5	10/17/00
SB-429A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	73	=	HVRSB429A-1000SN0002	10/29/00
SB-429A	0	2	Volatiles	Tetrachloroethene	11000	280000	=	HVRSB429A-1000SN0002	10/29/00
SB-431A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	72000	=	HVRSB431A-1000SN0002	10/29/00
SB-431A	0	2	Semi-Volatiles	Phenanthrene	330	360	=	HVRSB431A-1000SN0002	10/29/00
SB-431A	0	2	Total Metals	Cadmium	78000	913000	=	HVRSB431A-1000SN0002	10/29/00
SB-431A	0	2	Total Metals	Copper	2784000	3190000	=	HVRSB431A-1000SN0002	10/29/00
SB-431A	0	2	Total Metals	Lead	400000	486000	=	HVRSB431A-1000SN0002	10/29/00
SB-431A	2	4	PCBs	PCB-1260 (Arochlor 1260)	33	210	=	HVRSB431A-1000SN0204	10/29/00
SB-431A	2	4	Total Metals	Cadmium	78000	6840000	=	HVRSB431A-1000SN0204	10/29/00
SB-431A	2	4	Total Metals	Copper	2784000	25600000	=	HVRSB431A-1000SN0204	10/29/00
SB-431A	2	4	Total Metals	Lead	400000	900000	=	HVRSB431A-1000SN0204	10/29/00
SB-432	0	2	Total Metals	Cadmium	78000	193000	J MS	HVRSB432-1000SN0002	10/17/00
SB-432	0	2	Total Metals	Lead	400000	597000	J MS	HVRSB432-1000SN0002	10/17/00
SB-433A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	12000	=	HVRSB433A-1000SN0002	10/29/00
SB-434A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	4200	=	HVRSB434A-1000SN0002	10/29/00

TABLE A-1
Soil Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/Kg	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
SB-434A	0	2	Semi-Volatiles	Phenanthrene	330	410	=	HVRSB434A-1000SN0002	10/29/00
SB-434A	0	2	Total Metals	Cadmium	78000	163000	=	HVRSB434A-1000SN0002	10/29/00
SB-434A	0	2	Volatiles	1,1-Dichloroethene	70	770	=	HVRSB434A-1000SN0002	10/29/00
SB-434A	0	2	Volatiles	Trichloroethene	5000	10000	=	HVRSB434A-1000SN0002	10/29/00
SB-434A	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	470	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	PCBs	PCB-1260 (Arochlor 1260)	33	180	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	Total Metals	Cadmium	78000	1300000	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	Total Metals	Copper	2784000	3370000	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	Total Metals	Lead	400000	651000	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	Volatiles	Trichloroethene	5000	5600	=	HVRSB434A-1000SN0204	10/29/00
SB-434A	2	4	Volatiles	Vinyl Chloride	30	7800	=	HVRSB434A-1000SN0204	10/29/00
SB-435	0.5	2.5	Semi-Volatiles	Phenanthrene	330	540	=	HVRSB435-1000SN0.52.5	10/17/00
SB-435	0.5	2.5	Total Metals	Cadmium	78000	100000	J MS	HVRSB435-1000SN0.52.5	10/17/00
SB-435	2.5	4.5	Total Metals	Cadmium	78000	493000	J MS	HVRSB435-1000SN2.54.5	10/17/00
SB-435	4.5	6.5	PCBs	PCB-1242 (Arochlor 1242)	33	60	=	HVRSB435-1000SN4.56.5	10/17/00
SB-435A	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	97	=	HVRSB435A-1000SN0002	10/29/00
SB-438	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	1100	=	HVRSB438-1000SN0204	10/18/00
SB-438	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	110	=	HVRSB438-1000SN0406	10/18/00
SB-438	4	6	Volatiles	Vinyl Chloride	30	370	J LR	HVRSB438-1000SN0406	10/18/00
SB-438	6	8	PCBs	PCB-1248 (Arochlor 1248)	33	330	=	HVRSB438-1000SN0608	10/18/00
SB-438	6	8	PCBs	PCB-1260 (Arochlor 1260)	33	86	=	HVRSB438-1000SN0608	10/18/00
SB-438	6	8	Volatiles	Vinyl Chloride	30	88	=	HVRSB438-1000SN0608	10/18/00
SB-439	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	320	=	HVRSB439-1000SN0002	10/18/00
SB-439	0	2	Volatiles	Vinyl Chloride	30	92	J IS	HVRSB439-1000SN0002	10/18/00
SB-439	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	1600	=	HVRSB439-1000SN0204	10/18/00
SB-439	2	4	Pesticides	Endrin Aldehyde	1.7	2.5	=	HVRSB439-1000SN0204	10/18/00
SB-439	2	4	Total Metals	Arsenic	13000	13200	=	HVRSB439-1000SN0204	10/18/00
SB-439	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	93	=	HVRSB439-1000SN0406	10/18/00
SB-439	4	6	Volatiles	Vinyl Chloride	30	36	=	HVRSB439-1000SN0406	10/18/00
SB-439	6	8	PCBs	PCB-1248 (Arochlor 1248)	33	64	=	HVRSB439-1000SN0608	10/18/00
SB-439	8	10	PCBs	PCB-1248 (Arochlor 1248)	33	960	=	HVRSB439-1000SN0810	10/18/00
SB-439	8	10	Total Metals	Arsenic	13000	14100	=	HVRSB439-1000SN0810	10/18/00
SB-440	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	3900	=	HVRSB440-1000SN0002	10/17/00
SB-440	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	190	=	HVRSB440-1000SN0204	10/17/00
SB-443	6	8	Total Metals	Lead	400000	3570000	J SD	HVRSB443-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Benzo(a)Anthracene	900	8400	J IC	HVRSB444-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Benzo(a)Pyrene	330	6800	=	HVRSB444-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Benzo(b)Fluoranthene	900	8000	=	HVRSB444-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Benzo(g,h,i)Perylene	330	3300	=	HVRSB444-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Indeno(1,2,3-c,d)Pyrene	900	3300	=	HVRSB444-1000SN0608	10/29/00
SB-444	6	8	Semi-Volatiles	Phenanthrene	330	11000	=	HVRSB444-1000SN0608	10/29/00
SB-461	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	4200	=	HVRSB461-1000SN0002	10/5/00
SB-461	0	2	Semi-Volatiles	Phenanthrene	330	400	=	HVRSB461-1000SN0002	10/5/00
SB-461	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	6000	=	HVRSB461-1000SN0204	10/5/00
SB-461	2	4	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	46000	51000	=	HVRSB461-1000SN0204	10/5/00
SB-461	2	4	Semi-Volatiles	Phenanthrene	330	690	=	HVRSB461-1000SN0204	10/5/00
SB-461	2	4	Volatiles	Vinyl Chloride	30	65	J IS	HVRSB461-1000SN0204	10/5/00
SB-462	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	480	=	HVRSB462-1000SN0002	10/5/00
SB-462	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	17000	=	HVRSB462-1000SN0204	10/5/00
SB-462	2	4	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	46000	400000	=	HVRSB462-1000SN0204	10/5/00
SB-462A	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	7100	=	HVRSB462A-1000SN0406	10/18/00
SB-462A	6	8	PCBs	PCB-1248 (Arochlor 1248)	33	540	=	HVRSB462A-1000SN0608	10/18/00
SB-464	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	830	=	HVRSB464-1000SN0002	10/29/00
SB-464	0	2	Semi-Volatiles	Benzo(a)Anthracene	900	980	=	HVRSB464-1000SN0002	10/29/00
SB-464	0	2	Semi-Volatiles	Benzo(a)Pyrene	330	770	=	HVRSB464-1000SN0002	10/29/00
SB-464	0	2	Semi-Volatiles	Benzo(b)Fluoranthene	900	1100	J CC	HVRSB464-1000SN0002	10/29/00
SB-464	0	2	Semi-Volatiles	Benzo(g,h,i)Perylene	330	370	=	HVRSB464-1000SN0002	10/29/00
SB-464	0	2	Volatiles	Tetrachloroethene	11000	210000	=	HVRSB464-1000SN0002	10/29/00
SB-464	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	57	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Semi-Volatiles	Benzo(a)Anthracene	900	1200	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Semi-Volatiles	Benzo(a)Pyrene	330	750	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Semi-Volatiles	Benzo(b)Fluoranthene	900	980	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Semi-Volatiles	Benzo(g,h,i)Perylene	330	340	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Semi-Volatiles	Phenanthrene	330	540	=	HVRSB464-1000SN0204	10/29/00
SB-464	2	4	Volatiles	Tetrachloroethene	11000	89000	=	HVRSB464-1000SN0204	10/29/00
SB-464	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	150	=	HVRSB464-1000SN0406	10/29/00
SB-464	4	6	Semi-Volatiles	Phenanthrene	330	330	=	HVRSB464-1000SN0406	10/29/00
SB-464	4	6	Volatiles	Tetrachloroethene	11000	1700000	=	HVRSB464-1000SN0406	10/29/00
SB-468	0	2	Semi-Volatiles	Benzo(a)Pyrene	330	480	=	HVRSB468-0301SN0002	3/29/01
SB-468	0	2	Semi-Volatiles	Benzo(g,h,i)Perylene	330	660	=	HVRSB468-0301SN0002	3/29/01
SB-468	0	2	Semi-Volatiles	Phenanthrene	330	500	=	HVRSB468-0301SN0002	3/29/01

TABLE A-1
Soil Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/Kg	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
SB-477	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	340	=	HVRSB477-0301SN0002	3/21/01
SB-477	4	6	PCBs	PCB-1016 (Arochlor 1016)	3000	110000	=	HVRSB477-0301SN0406	3/21/01
SB-478	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	130	=	HVRSB478-0301SN0002	3/21/01
SB-478	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	100000	=	HVRSB478-0301SN0406	3/21/01
SB-479	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	57000	=	HVRSB479-0301SN0406	3/21/01
SB-480	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	1400	=	HVRSB480-0301SN0002	3/21/01
SB-481	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	10000	=	HVRSB481-0301SN0002	3/21/01
SB-481	0	2	PCBs	PCB-1260 (Arochlor 1260)	33	2100	=	HVRSB481-0301SN0002	3/21/01
SB-481	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	13000	=	HVRSB481-0301SN0406	3/21/01
SB-482	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	150	=	HVRSB482-0301SN0002	3/21/01
SB-482	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	6400	=	HVRSB482-0301SN0406	3/21/01
SB-483	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	4400	=	HVRSB483-0301SN0002	3/21/01
SB-485	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	37000	=	HVRSB485-0301SN0002	3/23/01
SB-485	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	860	=	HVRSB485-0301SN0406	3/23/01
SB-488	4	6	PCBs	PCB-1242 (Arochlor 1242)	33	16000	=	HVRSB488-0301SN0406	3/22/01
SB-489	0	2	PCBs	PCB-1254 (Arochlor 1254)	1000	1100	=	HVRSB489-0301SN0002	3/22/01
SB-490	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	37000	=	HVRSB490-0301SN0406	3/22/01
SB-492	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	540	=	HVRSB492-0301SN0002	3/22/01
SB-492	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	2600	=	HVRSB492-0301SN0406	3/22/01
SB-493	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	270	=	HVRSB493-0301SN0002	3/22/01
SB-493	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	55	=	HVRSB493-0301SN0406	3/22/01
SB-494	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	59	=	HVRSB494-0301SN0406	3/23/01
SB-495	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	2800	=	HVRSB495-0301SN0406	3/22/01
SB-496	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	110	=	HVRSB496-0301SN0002	3/22/01
SB-497	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	19000	=	HVRSB497-0301SN0002	3/21/01
SB-497	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	2600	=	HVRSB497-0301SN0406	3/21/01
SB-498	0	2	PCBs	PCB-1254 (Arochlor 1254)	1000	1000	=	HVRSB498-0301SN0002	3/21/01
SB-499	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	22000	=	HVRSB499-0301SN0002	3/21/01
SB-499	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	74	=	HVRSB499-0301SN0204	3/21/01
SB-500	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	9600	=	HVRSB500-0301SN0002	3/21/01
SB-500	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	410	=	HVRSB500-0301SN0204	3/21/01
SB-501	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	3900	=	HVRSB501-0301SN0002	3/26/01
SB-501	2	4	PCBs	PCB-1260 (Arochlor 1260)	33	95	=	HVRSB501-0301SN0204	3/26/01
SB-501	2	4	Total Metals	Cadmium	78000	191000	=	HVRSB501-0301SN0204	3/26/01
SB-502	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	20000	J SS	HVRSB502-0301SN0002	3/26/01
SB-502	0	2	Semi-Volatiles	Phenanthrene	330	520	=	HVRSB502-0301SN0002	3/26/01
SB-502	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	920	=	HVRSB502-0301SN0204	3/26/01
SB-506	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	1500	=	HVRSB506-0301SN0002	3/27/01
SB-506	0	2	PCBs	PCB-1260 (Arochlor 1260)	33	990	=	HVRSB506-0301SN0002	3/27/01
SB-509	0	2	PCBs	PCB-1248 (Arochlor 1248)	33	1500	=	HVRSB509-0301SN0002	3/21/01
SB-509	2	4	PCBs	PCB-1248 (Arochlor 1248)	33	39000	=	HVRSB509-0301SN0204	3/21/01
SB-509	4	6	PCBs	PCB-1248 (Arochlor 1248)	33	580	J SS	HVRSB509-0301SN0406	3/21/01
SB-509	4	6	Semi-Volatiles	Phenanthrene	330	1100	J SS	HVRSB509-0301SN0406	3/21/01
SB-509	4	6	Total Metals	Copper	2784000	5220000	=	HVRSB509-0301SN0406	3/21/01
SB-509	4	6	Total Metals	Lead	400000	560000	=	HVRSB509-0301SN0406	3/21/01
SB-509	4	6	Volatiles	Trichloroethene	5000	12000	=	HVRSB509-0301SN0406	3/21/01
SB-509	4	6	Volatiles	Vinyl Chloride	30	720	=	HVRSB509-0301SN0406	3/21/01
SB-526	11	12	Volatiles	Tetrachloroethene	11000	18000	=	HVRSB526-0401SN1112	4/6/01
SB-530	0	2	PCBs	PCB-1254 (Arochlor 1254)	1000	3000	=	HVRSB530-0301SN0002	3/28/01

Primary Data Qualifiers:

- J Estimated value. The analyte was detected, but the reported concentration is considered an estimate and may not be accurate or precise. This flag is an indicator of a quality control problem.
- = No flag is applied, then the analytical result is considered to be valid and usable as reported. No quality control problem is indicated

Secondary Data Qualifiers:

- SS Surrogate spike results outside of control limits
- IS Internal control standard results outside of control limits
- CC Continuing calibration control check outside of control limits.
- FD Field duplicate outside of control limits.
- SD Serial dilution check outside of control standards
- LS Laboratory spike results outside of control limits
- MS Matrix spike results outside of control limits.
- IC Initial calibration control check outside of control limits

TABLE A-2
Groundwater Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/L	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
DW-001	0	0	Total Metals	Chromium, Total	100	188	=	HVRDW001-0401WN0000	4/7/01
DW-001	0	0	Total Metals	Nickel	100	124	=	HVRDW001-0401WN0000	4/7/01
DW-001	0	0	Total Metals	Titanium	50	3110	=	HVRDW001-0401WN0000	4/7/01
MW-01	8	18	Total Metals	Chromium, Total	100	300	=	HVRMW01-1100WN0818	11/1/00
MW-01	8	18	Total Metals	Chromium, Total	100	600	J	HVRMW01-0101WN0818	1/31/01
MW-01	8	18	Total Metals	Nickel	100	100	=	HVRMW01-0101WN0818	1/31/01
MW-02	6	16	Total Metals	Chromium, Total	100	670	=	HVRMW02-0800WN0616	8/3/00
MW-02	6	16	Total Metals	Nickel	100	240	=	HVRMW02-0800WN0616	8/3/00
MW-02	6	16	Diss. Metals	Nickel	100	120	=	HVRMW02-1100WN0616	11/2/00
MW-02	6	16	Total Metals	Nickel	100	190	=	HVRMW02-1100WN0616	11/2/00
MW-02	6	16	Diss. Metals	Nickel	100	110	=	HVRMW02-0101WN0616	1/31/01
MW-02	6	16	Total Metals	Chromium, Total	100	1300	=	HVRMW02-0101WN0616	1/31/01
MW-02	6	16	Total Metals	Lead	15	41	=	HVRMW02-0101WN0616	1/31/01
MW-02	6	16	Total Metals	Nickel	100	630	=	HVRMW02-0101WN0616	1/31/01
MW-03	6	16	Total Metals	Lead	15	17	=	HVRMW03-0800WN0616	8/4/00
MW-03	6	16	Total Metals	Nickel	100	230	=	HVRMW03-0800WN0616	8/4/00
MW-03	6	16	Volatiles	Trichloroethene	5	75	=	HVRMW03-0800WN0616	8/4/00
MW-03	6	16	Total Metals	Nickel	100	170	=	HVRMW03-1100WN0616	11/2/00
MW-03	6	16	Volatiles	Trichloroethene	5	82	=	HVRMW03-1100WN0616	11/2/00
MW-03	6	16	Diss. Metals	Nickel	100	140	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Total Metals	Cadmium	5	16	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Total Metals	Chromium, Total	100	2000	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Total Metals	Lead	15	84	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Total Metals	Nickel	100	2100	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Volatiles	Trichloroethene	5	45	=	HVRMW03-0201WN0616	1/31/01
MW-03	6	16	Volatiles	Trichloroethene	5	55	=	HVRMW03-0501WN0616	5/3/01
MW-03	6	16	Volatiles	Trichloroethene	5	79	=	HVRMW03-0801WN0616	8/10/01
MW-04	9	19	Total Metals	Chromium, Total	100	230	=	HVRMW04-0800WN0919	8/3/00
MW-04	9	19	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	11	J	HVRMW04-1100WN0919	11/1/00
MW-04	9	19	Total Metals	Cadmium	5	11	=	HVRMW04-1100WN0919	11/1/00
MW-04	9	19	Total Metals	Cadmium	5	12	=	HVRMW04-0101WN0919	1/31/01
MW-04	9	19	Total Metals	Chromium, Total	100	250	=	HVRMW04-0101WN0919	1/31/01
MW-04	9	19	Total Metals	Lead	15	20	=	HVRMW04-0101WN0919	1/31/01
MW-04	9	19	Volatiles	Trichloroethene	5	9.4	=	HVRMW04-0501WN0919	5/3/01
MW-05	5	15	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	10	=	HVRMW05-0800WN0515	8/4/00
MW-05	5	15	Volatiles	cis-1,2-Dichloroethene	70	140	=	HVRMW05-0800WN0515	8/4/00
MW-05	5	15	Volatiles	Vinyl Chloride	2	170	=	HVRMW05-0800WN0515	8/4/00
MW-05	5	15	Volatiles	Vinyl Chloride	2	87	=	HVRMW05-1100WN0515	11/2/00
MW-05	5	15	Volatiles	Vinyl Chloride	2	18	=	HVRMW05-0201WN0515	2/1/01
MW-05	5	15	Volatiles	cis-1,2-Dichloroethene	70	130	=	HVRMW05-0501WN0515	5/3/01
MW-05	5	15	Volatiles	Tetrachloroethene	5	22	=	HVRMW05-0501WN0515	5/3/01
MW-05	5	15	Volatiles	Trichloroethene	5	25	=	HVRMW05-0501WN0515	5/3/01
MW-05	5	15	Volatiles	Vinyl Chloride	2	78	=	HVRMW05-0501WN0515	5/3/01
MW-05	5	15	Volatiles	Vinyl Chloride	2	84	=	HVRMW05-0801WN0515	8/10/01
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	30000	=	HVRMW06-0800WN1020	8/4/00
MW-06	10	20	Volatiles	1,1,1-Trichloroethane	200	8900	=	HVRMW06-0800WN1020	8/4/00
MW-06	10	20	Volatiles	cis-1,2-Dichloroethene	70	91000	=	HVRMW06-0800WN1020	8/4/00
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	120000	J	HVRMW06-1100WN1020	11/2/00
MW-06	10	20	Volatiles	1,1,1-Trichloroethane	200	11000	=	HVRMW06-1100WN1020	11/2/00
MW-06	10	20	Volatiles	cis-1,2-Dichloroethene	70	79000	=	HVRMW06-1100WN1020	11/2/00
MW-06	10	20	Volatiles	Tetrachloroethene	5	3200	=	HVRMW06-1100WN1020	11/2/00
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	110000	=	HVRMW06-0201WN1020	2/1/01
MW-06	10	20	Volatiles	1,1,1-Trichloroethane	200	13000	=	HVRMW06-0201WN1020	2/1/01
MW-06	10	20	Volatiles	cis-1,2-Dichloroethene	70	100000	=	HVRMW06-0201WN1020	2/1/01
MW-06	10	20	Volatiles	Tetrachloroethene	5	3800	=	HVRMW06-0201WN1020	2/1/01
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	600	E	HVRMW06-0501WN1020	5/4/01
MW-06	10	20	Volatiles	1,1,1-Trichloroethane	200	12000	=	HVRMW06-0501WN1020	5/4/01
MW-06	10	20	Volatiles	cis-1,2-Dichloroethene	70	93000	=	HVRMW06-0501WN1020	5/4/01
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	480000	=	HVRMW06-0501WN1020DL	5/4/01
MW-06	10	20	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	43000	=	HVRMW06-0801WN1020	8/10/01
MW-06	10	20	Volatiles	1,1,1-Trichloroethane	200	9500	=	HVRMW06-0801WN1020	8/10/01
MW-06	10	20	Volatiles	cis-1,2-Dichloroethene	70	58000	=	HVRMW06-0801WN1020	8/10/01
MW-07	6	16	Volatiles	1,1-Dichloroethene	7	11	=	HVRMW07-0800WN0616	8/4/00
MW-07	6	16	Volatiles	cis-1,2-Dichloroethene	70	270	=	HVRMW07-0800WN0616	8/4/00
MW-07	6	16	Volatiles	Tetrachloroethene	5	55	=	HVRMW07-0800WN0616	8/4/00
MW-07	6	16	Volatiles	Trichloroethene	5	14	=	HVRMW07-0800WN0616	8/4/00
MW-07	6	16	Volatiles	Vinyl Chloride	2	77	=	HVRMW07-0800WN0616	8/4/00
MW-07	6	16	Volatiles	cis-1,2-Dichloroethene	70	220	=	HVRMW07-1100WN0616	11/2/00
MW-07	6	16	Volatiles	Tetrachloroethene	5	61	=	HVRMW07-1100WN0616	11/2/00
MW-07	6	16	Volatiles	Trichloroethene	5	14	=	HVRMW07-1100WN0616	11/2/00
MW-07	6	16	Volatiles	Vinyl Chloride	2	62	=	HVRMW07-1100WN0616	11/2/00
MW-07	6	16	Volatiles	cis-1,2-Dichloroethene	70	210	=	HVRMW07-0201WN0616	2/1/01
MW-07	6	16	Volatiles	Tetrachloroethene	5	57	=	HVRMW07-0201WN0616	2/1/01
MW-07	6	16	Volatiles	Trichloroethene	5	12	=	HVRMW07-0201WN0616	2/1/01

TABLE A-2
Groundwater Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/L	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
MW-07	6	16	Volatiles	Vinyl Chloride	2	58	=	HVRMW07-0201WN0616	2/1/01
MW-07	6	16	Volatiles	cis-1,2-Dichloroethene	70	310	=	HVRMW07-0501WN0616	5/3/01
MW-07	6	16	Volatiles	Tetrachloroethene	5	47	=	HVRMW07-0501WN0616	5/3/01
MW-07	6	16	Volatiles	Trichloroethene	5	14	=	HVRMW07-0501WN0616	5/3/01
MW-07	6	16	Volatiles	Vinyl Chloride	2	59	=	HVRMW07-0501WN0616	5/3/01
MW-07	6	16	Volatiles	cis-1,2-Dichloroethene	70	230	=	HVRMW07-0801WN0616	8/10/01
MW-07	6	16	Volatiles	Tetrachloroethene	5	70	=	HVRMW07-0801WN0616	8/10/01
MW-07	6	16	Volatiles	Trichloroethene	5	14	=	HVRMW07-0801WN0616	8/10/01
MW-07	6	16	Volatiles	Vinyl Chloride	2	55	=	HVRMW07-0801WN0616	8/10/01
MW-09	9	19	Total Metals	Chromium, Total	100	430	=	HVRMW09-0800WN0919	8/4/00
MW-09	9	19	Total Metals	Nickel	100	200	=	HVRMW09-0800WN0919	8/4/00
MW-09	9	19	Volatiles	Tetrachloroethene	5	27	=	HVRMW09-0800WN0919	8/4/00
MW-09	9	19	Volatiles	Trichloroethene	5	39	=	HVRMW09-0800WN0919	8/4/00
MW-09	9	19	Diss. Metals	Nickel	100	180	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Total Metals	Chromium, Total	100	680	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Total Metals	Nickel	100	280	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Volatiles	Tetrachloroethene	5	8.6	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Volatiles	Trichloroethene	5	16	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Volatiles	Vinyl Chloride	2	3.4	=	HVRMW09-1100WN0919	11/2/00
MW-09	9	19	Total Metals	Chromium, Total	100	960	=	HVRMW09-0201WN0919	2/1/01
MW-09	9	19	Total Metals	Nickel	100	360	=	HVRMW09-0201WN0919	2/1/01
MW-09	9	19	Volatiles	Tetrachloroethene	5	15	=	HVRMW09-0201WN0919	2/1/01
MW-09	9	19	Volatiles	Trichloroethene	5	13	=	HVRMW09-0201WN0919	2/1/01
MW-09	9	19	Volatiles	Tetrachloroethene	5	19	=	HVRMW09-0301WN0919	3/20/01
MW-09	9	19	Volatiles	Trichloroethene	5	16	=	HVRMW09-0301WN0919	3/20/01
MW-09	9	19	Volatiles	Tetrachloroethene	5	18	=	HVRMW09-0501WN0919	5/3/01
MW-09	9	19	Volatiles	Trichloroethene	5	16	=	HVRMW09-0501WN0919	5/3/01
MW-09	9	19	Volatiles	Tetrachloroethene	5	12	=	HVRMW09-0801WN0919	8/10/01
MW-09	9	19	Volatiles	Trichloroethene	5	14	=	HVRMW09-0801WN0919	8/10/01
MW-09	9	19	Volatiles	Vinyl Chloride	2	2.2	=	HVRMW09-0801WN0919	8/10/01
MW-10	8	18	Total Metals	Cadmium	5	8.9	=	HVRMW10-0800WN0818	8/4/00
MW-10	8	18	Total Metals	Nickel	100	110	=	HVRMW10-0800WN0818	8/4/00
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	7500	=	HVRMW10-0800WN0818	8/4/00
MW-10	8	18	Volatiles	Tetrachloroethene	5	37000	=	HVRMW10-0800WN0818	8/4/00
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	9800	=	HVRMW10-1100WN0818	11/2/00
MW-10	8	18	Volatiles	Tetrachloroethene	5	47000	=	HVRMW10-1100WN0818	11/2/00
MW-10	8	18	Volatiles	Trichloroethene	5	2900	=	HVRMW10-1100WN0818	11/2/00
MW-10	8	18	Total Metals	Cadmium	5	5.1	=	HVRMW10-0201WN0818	2/1/01
MW-10	8	18	Total Metals	Lead	15	39	=	HVRMW10-0201WN0818	2/1/01
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	7900	=	HVRMW10-0201WN0818	2/1/01
MW-10	8	18	Volatiles	Tetrachloroethene	5	45000	=	HVRMW10-0201WN0818	2/1/01
MW-10	8	18	Volatiles	Trichloroethene	5	2600	=	HVRMW10-0201WN0818	2/1/01
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	7700	=	HVRMW10-0301WN0818	3/20/01
MW-10	8	18	Volatiles	Tetrachloroethene	5	46000	=	HVRMW10-0301WN0818	3/20/01
MW-10	8	18	Volatiles	Trichloroethene	5	2700	=	HVRMW10-0301WN0818	3/20/01
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	7100	=	HVRMW10-0501WN0818	5/4/01
MW-10	8	18	Volatiles	Tetrachloroethene	5	42000	=	HVRMW10-0501WN0818	5/4/01
MW-10	8	18	Volatiles	Trichloroethene	5	2400	=	HVRMW10-0501WN0818	5/4/01
MW-10	8	18	Volatiles	cis-1,2-Dichloroethene	70	9200	=	HVRMW10-0801WN0818	8/10/01
MW-10	8	18	Volatiles	Tetrachloroethene	5	60000	=	HVRMW10-0801WN0818	8/10/01
MW-10	8	18	Volatiles	Trichloroethene	5	3200	=	HVRMW10-0801WN0818	8/10/01
MW-11	2	12	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	87	=	HVRMW11-0800WN0212	8/4/00
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	18000	=	HVRMW11-0800WN0212	8/4/00
MW-11	2	12	Volatiles	Tetrachloroethene	5	53000	=	HVRMW11-0800WN0212	8/4/00
MW-11	2	12	Volatiles	Trichloroethene	5	5900	=	HVRMW11-0800WN0212	8/4/00
MW-11	2	12	Total Metals	Cadmium	5	5.9	=	HVRMW11-1100WN0212	11/2/00
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	26000	=	HVRMW11-1100WN0212	11/2/00
MW-11	2	12	Volatiles	Tetrachloroethene	5	63000	=	HVRMW11-1100WN0212	11/2/00
MW-11	2	12	Volatiles	Trichloroethene	5	9700	=	HVRMW11-1100WN0212	11/2/00
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	30000	=	HVRMW11-0201WN0212	2/1/01
MW-11	2	12	Volatiles	Tetrachloroethene	5	63000	=	HVRMW11-0201WN0212	2/1/01
MW-11	2	12	Volatiles	Trichloroethene	5	7900	=	HVRMW11-0201WN0212	2/1/01
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	34000	=	HVRMW11-0301WN0212	3/20/01
MW-11	2	12	Volatiles	Tetrachloroethene	5	66000	=	HVRMW11-0301WN0212	3/20/01
MW-11	2	12	Volatiles	Trichloroethene	5	8000	=	HVRMW11-0301WN0212	3/20/01
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	26000	=	HVRMW11-0501WN0212	5/4/01
MW-11	2	12	Volatiles	Tetrachloroethene	5	60000	=	HVRMW11-0501WN0212	5/4/01
MW-11	2	12	Volatiles	Trichloroethene	5	7400	=	HVRMW11-0501WN0212	5/4/01
MW-11	2	12	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	66	=	HVRMW11-0801WN0212	8/10/01
MW-11	2	12	Volatiles	cis-1,2-Dichloroethene	70	23000	=	HVRMW11-0801WN0212	8/10/01
MW-11	2	12	Volatiles	Tetrachloroethene	5	71000	=	HVRMW11-0801WN0212	8/10/01
MW-11	2	12	Volatiles	Trichloroethene	5	8300	=	HVRMW11-0801WN0212	8/10/01
MW-12	5	15	Total Metals	Lead	15	49	=	HVRMW12-0800WN0515	8/3/00
MW-12	5	15	Total Metals	Lead	15	32	=	HVRMW12-0101WN0515	1/31/01

TABLE A-2
Groundwater Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/L	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
MW-13S	6	16	Volatiles	Vinyl Chloride	2	3.3	=	HVRMW13S-1000WN0616	10/27/00
MW-17S	5	15	Volatiles	Tetrachloroethene	5	42	=	HVRMW17S-0301WN0515	3/23/01
MW-17S	5	15	Volatiles	Trichloroethene	5	9.6	=	HVRMW17S-0301WN0515	3/23/01
MW-17S	4	14	Volatiles	Tetrachloroethene	5	71	=	HVRMW17S-0701WN0414	7/13/01
MW-17S	4	14	Volatiles	Trichloroethene	5	15	=	HVRMW17S-0701WN0414	7/13/01
MW-18S	14	24	Volatiles	cis-1,2-Dichloroethene	70	17000	=	HVRMW18S-0301WN1424	3/21/01
MW-18S	14	24	Volatiles	Vinyl Chloride	2	4500	=	HVRMW18S-0301WN1424	3/21/01
MW-18S	14	24	Volatiles	cis-1,2-Dichloroethene	70	23000	=	HVRMW18S-0701WN1424	7/13/01
MW-18S	14	24	Volatiles	Vinyl Chloride	2	5000	=	HVRMW18S-0701WN1424	7/13/01
MW-28S	5	15	Volatiles	cis-1,2-Dichloroethene	70	91000	=	HVRMW28S-0301WN0515	3/27/01
MW-28S	5	15	Volatiles	Trichloroethene	5	59000	=	HVRMW28S-0301WN0515	3/27/01
MW-28S	5	15	Volatiles	Vinyl Chloride	2	7000	=	HVRMW28S-0301WN0515	3/27/01
MW-29S	4	14	Volatiles	cis-1,2-Dichloroethene	70	350	=	HVRMW29S-0301WN0414	3/30/01
MW-31D	46	56	Diss. Metals	Barium	2000	3810	=	HVRMW31D-0701WN4656	7/17/01
MW-31D	46	56	Total Metals	Barium	2000	3780	=	HVRMW31D-0701WN4656	7/17/01
MW-31S	12	22	Volatiles	Tetrachloroethene	5	310	=	HVRMW31S-0701WN1222	7/12/01
MW-31S	12	22	Volatiles	Trichloroethene	5	63	=	HVRMW31S-0701WN1222	7/12/01
PZ-10	5	15	Volatiles	cis-1,2-Dichloroethene	70	340	=	HVRPZ10-0301WN0515	3/29/01
PZ-10	5	15	Volatiles	Trichloroethene	5	60	=	HVRPZ10-0301WN0515	3/29/01
SB-406	4	9	Total Metals	Titanium	50	86	=	HVRSB406-1000WN0409	10/10/00
SB-423	7	12	Volatiles	Vinyl Chloride	2	3.5	=	HVRSB423-1000WN0712	10/16/00
SB-425	7	12	Volatiles	Vinyl Chloride	2	5.6	=	HVRSB425-1000WN0712	10/16/00
SB-432	8	13	Volatiles	cis-1,2-Dichloroethene	70	11000	=	HVRSB432-1000WN0813	10/17/00
SB-432	8	13	Volatiles	Tetrachloroethene	5	16000	=	HVRSB432-1000WN0813	10/17/00
SB-432	8	13	Volatiles	Trichloroethene	5	5100	=	HVRSB432-1000WN0813	10/17/00
SB-435	7	12	Volatiles	Vinyl Chloride	2	3.5	=	HVRSB435-1000WN0712	10/17/00
SB-436	6	11	PCBs	PCB-1248 (Arochlor 1248)	1	5000	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Acenaphthylene	10	30	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Benzo(a)Pyrene	0.2	37	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Benzo(b)Fluoranthene	0.09	72	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Benzo(g,h,i)Perylene	10	20	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Benzo(k)Fluoranthene	0.9	36	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Bis(2-Ethylhexyl) Phthalate	10	10000	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Chrysene	9	450	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Naphthalene	6	160	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Semi-Volatiles	Phenanthrene	10	500	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Total Metals	Titanium	50	53.1	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Volatiles	cis-1,2-Dichloroethene	70	5500	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Volatiles	Tetrachloroethene	5	66000	=	HVRSB436-1000WN0611	10/18/00
SB-436	6	11	Volatiles	Trichloroethene	5	84000	=	HVRSB436-1000WN0611	10/18/00
SB-439	12	17	PCBs	PCB-1248 (Arochlor 1248)	1	1	=	HVRSB439-1000WN1217	10/18/00
SB-439	12	17	Volatiles	cis-1,2-Dichloroethene	70	110000	=	HVRSB439-1000WN1217	10/18/00
SB-439	12	17	Volatiles	Trichloroethene	5	8000	=	HVRSB439-1000WN1217	10/18/00
SB-439	12	17	Volatiles	Vinyl Chloride	2	23000	=	HVRSB439-1000WN1217	10/18/00
SB-444	11	16	Volatiles	Tetrachloroethene	5	6.4	=	HVRSB444-1000WN1116	10/29/00
SB-501	6.5	11.5	Diss. Metals	Cadmium	5	10.4	=	HVRSB501-0301WN6.511.5	3/26/01
SB-501	6.5	11.5	Total Metals	Cadmium	5	10.3	=	HVRSB501-0301WN6.511.5	3/26/01
SB-502	5	10	PCBs	PCB-1242 (Arochlor 1242)	1	1.3	=	HVRSB502-0301WN0510	3/27/01
SB-502	5	10	Volatiles	cis-1,2-Dichloroethene	70	84	=	HVRSB502-0301WN0510	3/27/01
SB-502	5	10	Volatiles	Methylene Chloride	4	5.6	=	HVRSB502-0301WN0510	3/27/01
SB-502	5	10	Volatiles	Vinyl Chloride	2	130	=	HVRSB502-0301WN0510	3/27/01
SB-503	6.5	11.5	Diss. Metals	Cadmium	5	6.7	=	HVRSB503-0301WN6.511.5	3/26/01
SB-503	6.5	11.5	Total Metals	Cadmium	5	8.2	=	HVRSB503-0301WN6.511.5	3/26/01
SB-503	6.5	11.5	Volatiles	cis-1,2-Dichloroethene	70	220	=	HVRSB503-0301WN6.511.5	3/26/01
SB-503	6.5	11.5	Volatiles	Tetrachloroethene	5	210	=	HVRSB503-0301WN6.511.5	3/26/01
SB-503	6.5	11.5	Volatiles	Trichloroethene	5	74	=	HVRSB503-0301WN6.511.5	3/26/01
SB-503	6.5	11.5	Volatiles	Vinyl Chloride	2	27	=	HVRSB503-0301WN6.511.5	3/26/01
SB-507	13	18	Volatiles	cis-1,2-Dichloroethene	70	2700	=	HVRSB507-0301WN1318	3/28/01
SB-507	13	18	Volatiles	Tetrachloroethene	5	310	=	HVRSB507-0301WN1318	3/28/01
SB-507	13	18	Volatiles	Trichloroethene	5	5000	=	HVRSB507-0301WN1318	3/28/01
SB-525	14	19	Volatiles	cis-1,2-Dichloroethene	70	800	=	HVRSB525-0301WN1419	3/28/01
SB-525	14	19	Volatiles	Tetrachloroethene	5	82	=	HVRSB525-0301WN1419	3/28/01
SB-525	14	19	Volatiles	Trichloroethene	5	160	=	HVRSB525-0301WN1419	3/28/01
SB-525	23	28	Volatiles	cis-1,2-Dichloroethene	70	540	=	HVRSB525-0301WN2328	4/3/01
SB-525	23	28	Volatiles	Tetrachloroethene	5	370	=	HVRSB525-0301WN2328	4/3/01
SB-525	23	28	Volatiles	Trichloroethene	5	180	=	HVRSB525-0301WN2328	4/3/01
SB-525	29	39	PCBs	PCB-1016 (Arochlor 1016)	1	2.2	=	HVRSB525-0401WN2939	4/8/01
SB-525	29	39	PCBs	PCB-1248 (Arochlor 1248)	1	3.5	=	HVRSB525-0401WN2939	4/8/01
SB-525	29	39	Total Metals	Copper	1000	2140	=	HVRSB525-0401WN2939	4/8/01
SB-525	29	39	Volatiles	cis-1,2-Dichloroethene	70	1900	=	HVRSB525-0401WN2939	4/8/01
SB-525	29	39	Volatiles	Tetrachloroethene	5	40000	=	HVRSB525-0401WN2939	4/8/01
SB-525	29	39	Volatiles	Trichloroethene	5	4400	=	HVRSB525-0401WN2939	4/8/01
SB-525	39	49	Volatiles	cis-1,2-Dichloroethene	70	640	=	HVRSB525-0401WN3949	4/17/01
SB-525	39	49	Volatiles	Tetrachloroethene	5	26000	=	HVRSB525-0401WN3949	4/17/01

TABLE A-2
Groundwater Sample Results Above Target Levels
The Hoover Company

Station Identifier	Upper Sample Depth	Lower Sample Depth	Parameter Group	Parameter	Target Level ug/L	Analytical Result	Data Qualifier	Sample Identifier	Collection Date
SB-525	39	49	Volatiles	Trichloroethene	5	2500	=	HVRSB525-0401WN3949	4/17/01
SB-526	24	29	Volatiles	Tetrachloroethene	5	18	=	HVRSB526-0401WN2429	4/10/01
SB-526	27	29	Volatiles	Tetrachloroethene	5	53	=	HVRSB526-0401WN2729	4/11/01
SB-537	15	20	Semi-Volatiles	Benzo(a)Anthracene	0.09	0.23	=	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Semi-Volatiles	Benzo(a)Pyrene	0.2	0.45	J IC	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Semi-Volatiles	Benzo(b)Fluoranthene	0.09	0.36	J IC	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Semi-Volatiles	Dibenz(a,h)Anthracene	0.02	0.58	J IC	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Semi-Volatiles	Indeno(1,2,3-c,d)Pyrene	0.09	0.43	J IC	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Total Metals	Titanium	50	132	=	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Volatiles	cis-1,2-Dichloroethene	70	210	=	HVRSB537-0601WN1520	6/21/01
SB-537	15	20	Volatiles	Trichloroethene	5	68	=	HVRSB537-0601WN1520	6/21/01
SB-539	33.5	40	Semi-Volatiles	Benzo(a)Pyrene	0.2	0.37	=	HVRSB539-0601WN33.540.0	6/25/01
SB-539	33.5	40	Semi-Volatiles	Benzo(b)Fluoranthene	0.09	0.37	=	HVRSB539-0601WN33.540.0	6/25/01
SB-539	33.5	40	Semi-Volatiles	Dibenz(a,h)Anthracene	0.02	0.46	=	HVRSB539-0601WN33.540.0	6/25/01
SB-539	33.5	40	Semi-Volatiles	Indeno(1,2,3-c,d)Pyrene	0.09	0.45	=	HVRSB539-0601WN33.540.0	6/25/01
SB-541	37	47	Semi-Volatiles	Benzo(a)Pyrene	0.2	0.25	J IC	HVRSB541-0601WN3747	6/23/01
SB-541	37	47	Semi-Volatiles	Dibenz(a,h)Anthracene	0.02	0.43	J IC	HVRSB541-0601WN3747	6/23/01
SB-541	37	47	Semi-Volatiles	Indeno(1,2,3-c,d)Pyrene	0.09	0.28	J IC	HVRSB541-0601WN3747	6/23/01
SB-541	37	47	Total Metals	Barium	2000	2040	=	HVRSB541-0601WN3747	6/23/01
SB-544	15.5	17.5	Semi-Volatiles	Indeno(1,2,3-c,d)Pyrene	0.09	0.33	J IC	HVRSB544-0601WN15.517.5	6/25/01
SU-001	0	5	Volatiles	cis-1,2-Dichloroethene	70	82	=	HVRSU001-0301WN0005	3/26/01
SU-001	0	5	Volatiles	Tetrachloroethene	5	280	=	HVRSU001-0301WN0005	3/26/01
SU-001	0	5	Volatiles	Trichloroethene	5	83	=	HVRSU001-0301WN0005	3/26/01
SW-001	0	1	Semi-Volatiles	Benzo(a)Anthracene	0.09	0.29	J IC	HVRSW001-1000WN0001	10/29/00
SW-001	0	1	Semi-Volatiles	Benzo(b)Fluoranthene	0.09	0.26	=	HVRSW001-1000WN0001	10/29/00
SW-001	0	1	Semi-Volatiles	Dibenz(a,h)Anthracene	0.02	0.033	=	HVRSW001-1000WN0001	10/29/00
SW-001	0	1	Volatiles	Tetrachloroethene	5	10	=	HVRSW001-1000WN0001	10/29/00
SW-001	0	1	Volatiles	Trichloroethene	5	5.5	=	HVRSW001-1000WN0001	10/29/00
SW-003R	7	8	Volatiles	Tetrachloroethene	5	10	=	HVRSW003R-0401WN0708	4/12/01
SW-003R	7	8	Volatiles	Trichloroethene	5	12	=	HVRSW003R-0401WN0708	4/12/01
SW-003R	7	8	Volatiles	Vinyl Chloride	2	5.6	=	HVRSW003R-0401WN0708	4/12/01
SW-006R	6.3	6.5	Volatiles	Trichloroethene	5	6.1	=	HVRSW006R-0401WN6.36.5	4/6/01
SW-006R	6.3	6.5	Volatiles	Vinyl Chloride	2	2.6	=	HVRSW006R-0401WN6.36.5	4/6/01
SW-007R	5	6	Volatiles	Tetrachloroethene	5	11	=	HVRSW007R-0401WN0506	4/17/01
SW-007R	5	6	Volatiles	Trichloroethene	5	5.9	=	HVRSW007R-0401WN0506	4/17/01
SW-008R	4	5	Volatiles	Tetrachloroethene	5	110	=	HVRSW008R-0401WN0405	4/17/01
SW-008R	4	5	Volatiles	Trichloroethene	5	32	=	HVRSW008R-0401WN0405	4/17/01

Appendix B

APPENDIX B

Introduction

Groundwater and soils sample results greater than target levels are presented in this Appendix B and used throughout the report to delineate the nature and extent of compounds of interest. Target levels are based upon risk and exceedances indicate that further evaluation may be needed to determine if remediation may be necessary. If, after further evaluation, it is determined that significant risk to human health or the environment is present, cleanup levels may be developed to guide the selection and implementation of potential remedies. Development of cleanup levels was not part of the Onsite Investigation evaluation.

Of 4988 COI detected in water samples collected onsite, only 259 or 5% exceeded target levels and are presented on the Appendix B Figures. In soils 9403 COI were detected onsite while only 192 or 2% exceeded target levels.

Data results reported in these tables are in units of ug/L for water, or ug/Kg for soils, which are the equivalent of 1 part-per-billion. To put the units into perspective 1 part-per-billion is equal to approximately 1 drop in a 13,000 gallon swimming pool.

Primary and secondary data qualifiers are listed in the Appendix A Tables. Primary qualifiers identify how the data may be used. Secondary qualifiers are used to identify why the primary qualifier was applied. Only data qualified as estimated (J) or acceptable (=) are presented in the Appendix B Figures. For simplicity, only the primary qualifier J (estimated) is used on the figures to indicate data which may be inaccurate or imprecise. Secondary qualifiers are not included on the Appendix B Figures.

Primary Qualifiers

J Estimated. The analyte was detected, but the reported concentration is considered an estimate and may not be accurate or precise. This flag is an indicator of a quality control problem.

= No qualifier is applied, then the analytical result is considered to be valid and usable as reported. No quality control problem is indicated.

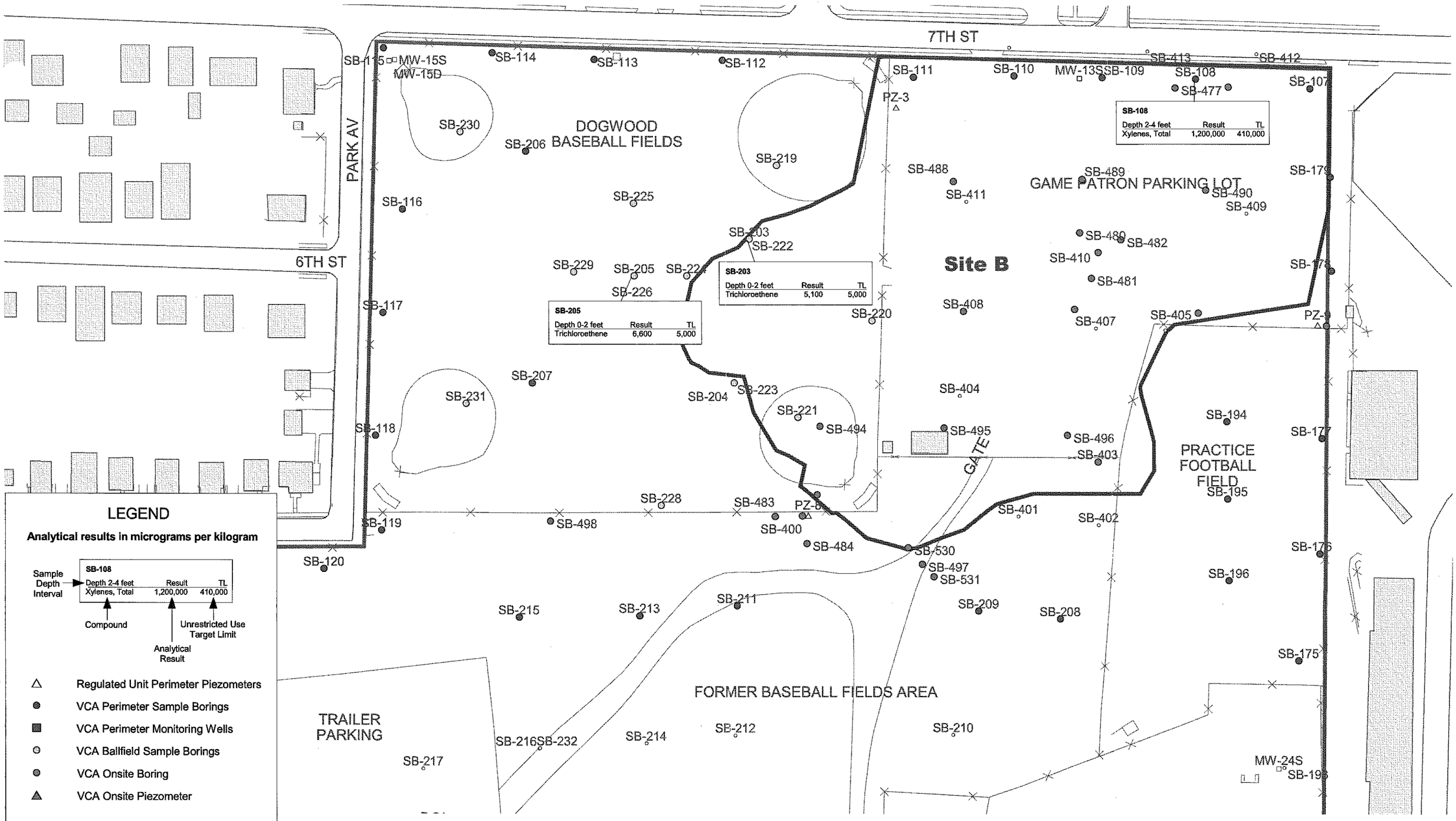


Figure B-1
Appendix B
Volatile Organic Compound Target Limit Exceedances in Soil
for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

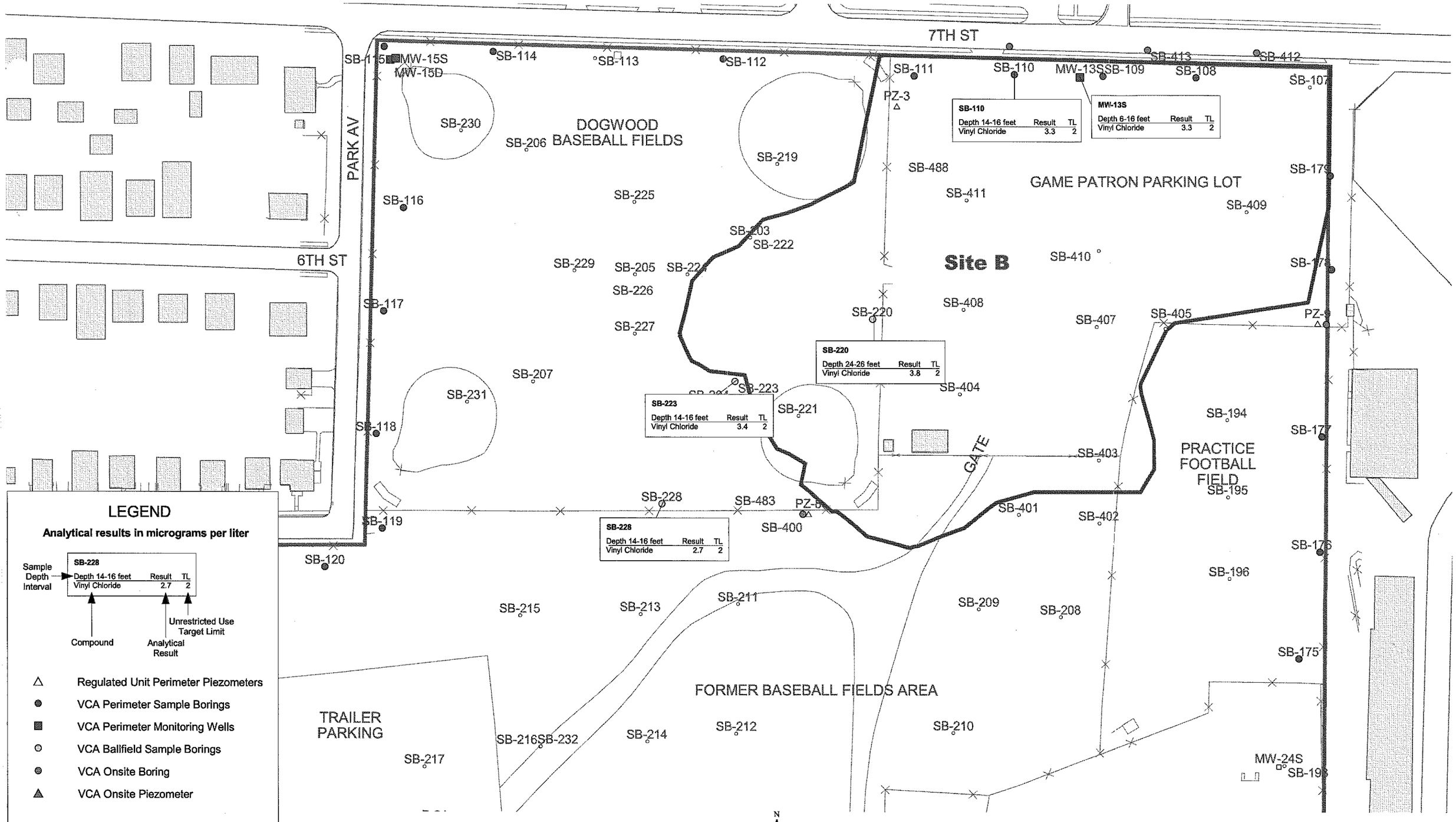


Figure B-2
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

SB-226

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	2,900	900
Benzo(a)Pyrene (PAH)	3,000	330
Benzo(b)Fluoranthene (PAH)	3,300	900
Indeno(1,2,3-c,d)Pyrene (PAH)	1,900	900
Depth 4-6 feet		
Benzo(a)Anthracene (PAH)	4,300	900
Benzo(a)Pyrene (PAH)	3,900	330
Benzo(b)Fluoranthene (PAH)	4,100	900
Indeno(1,2,3-c,d)Pyrene (PAH)	1,800	900

SB-224

Depth 0-2 feet	Result	TL
Benzo(a)Pyrene (PAH)	860	330
Benzo(b)Fluoranthene(PAH)	1,100	900

SB-203

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	1,800	900
Benzo(a)Pyrene (PAH)	1,600	330
Benzo(b)Fluoranthene (PAH)	2,100	900
Benzo(g,h,i)Perylene (PAH)	900	330
Indeno(1,2,3-c,d)Pyrene (PAH)	1,000	900
Phenanthrene (PAH)	3,500	330

SB-222

Depth 0-0.5 feet	Result	TL
Benzo(a)Anthracene (PAH)	2,400	900
Benzo(a)Pyrene (PAH)	2,300	330
Benzo(b)Fluoranthene (PAH)	2,700	900
Indeno(1,2,3-c,d)Pyrene (PAH)	1,400	900
Depth 0-2 feet		
Benzo(a)Anthracene (PAH)	3,500	900
Benzo(a)Pyrene (PAH)	3,400	330
Benzo(b)Fluoranthene (PAH)	4,300	900
Indeno(1,2,3-c,d)Pyrene (PAH)	2,200	900

SB-108

Depth 2-4 feet	Result	TL
Bis(2-Ethylhexyl) Phthalate	110,000	46,000
Depth 4-6 feet		
Bis(2-Ethylhexyl) Phthalate	9,200,000	46,000

SB-205

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	3,800	900
Benzo(a)Pyrene (PAH)	3,300	330
Benzo(b)Fluoranthene (PAH)	4,200	900
Benzo(g,h,i)Perylene (PAH)	1,900	330
Indeno(1,2,3-c,d)Pyrene (PAH)	2,200	900
Phenanthrene (PAH)	8,600	330

SB-204

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	2,500	900
Benzo(a)Pyrene (PAH)	2,100	330
Benzo(b)Fluoranthene (PAH)	3,000	900
Benzo(g,h,i)Perylene (PAH)	1,400	330
Indeno(1,2,3-c,d)Pyrene (PAH)	1,500	900
Phenanthrene (PAH)	5,200	330

SB-223

Depth 0-0.5 feet	Result	TL
Benzo(a)Anthracene (PAH)	900	900
Benzo(a)Pyrene (PAH)	1,000	330
Benzo(b)Fluoranthene (PAH)	1,200	900
Depth 0-2 feet		
Benzo(a)Anthracene (PAH)	1,400	900
Benzo(a)Pyrene (PAH)	1,500	330
Benzo(b)Fluoranthene (PAH)	1,800	900
Indeno(1,2,3-c,d)Pyrene (PAH)	1,000	900

SB-410

Depth 3-5 feet	Result	TL
Bis(2-Ethylhexyl) Phthalate	71,000	46,000
Depth 5-7 feet		
Benzo(a)Anthracene (PAH)	2,300	900
Phenanthrene (PAH)	4,700	330

SB-400

Depth 3-5 feet	Result	TL
Bis(2-Ethylhexyl) Phthalate	64,000	46,000

SB-228

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	2,500	900
Benzo(a)Pyrene (PAH)	2,500	330
Benzo(b)Fluoranthene (PAH)	2,800	900
Indeno(1,2,3-c,d)Pyrene (PAH)	1,600	900

SB-408

Depth 1-3 feet	Result	TL
Benzo(a)Pyrene (PAH)	590	330
Benzo(g,h,i)Perylene (PAH)	340	330

DOGWOOD BASEBALL FIELDS

GAME PATRON PARKING LOT

Site B

PRACTICE FOOTBALL FIELD

SOCCER FIELD

TRAILER PARKING

FORMER BASEBALL FIELDS AREA

61H ST

RK AV

GATE

GATE

MW-15S MW-15D MW-13S MW-24S PZ-3 PZ-5 P-24 P-23 P-17

SB-115 SB-114 SB-113 SB-112 SB-111 SB-110 SB-109 SB-108 SB-107 SB-413 SB-412 SB-230 SB-206 SB-219 SB-488 SB-411 SB-409 SB-176 SB-116 SB-225 SB-203 SB-222 SB-229 SB-205 SB-224 SB-226 SB-117 SB-227 SB-207 SB-231 SB-223 SB-204 SB-221 SB-410 SB-408 SB-407 SB-405 SB-220 SB-404 SB-194 SB-177 SB-118 SB-119 SB-228 SB-483 SB-400 SB-403 SB-401 SB-402 SB-195 SB-121 SB-120 SB-196 SB-215 SB-213 SB-211 SB-209 SB-208 SB-238 SB-122A SB-175 SB-212 SB-210 SB-217 SB-218 SB-276 SB-433 SB-432 SB-430 SB-427 SB-426 SB-433A SB-431A SB-428 SB-428A SB-440 SB-197 SB-200 SB-174 BS-01

LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval → **SB-409**

Depth 0-1 feet	Result	TL
PCB-1248	78	33

Compound

Analytical Result

Unrestricted Use Target Limit

- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer

Site Condition Assessment Areas

2000 Property Boundary

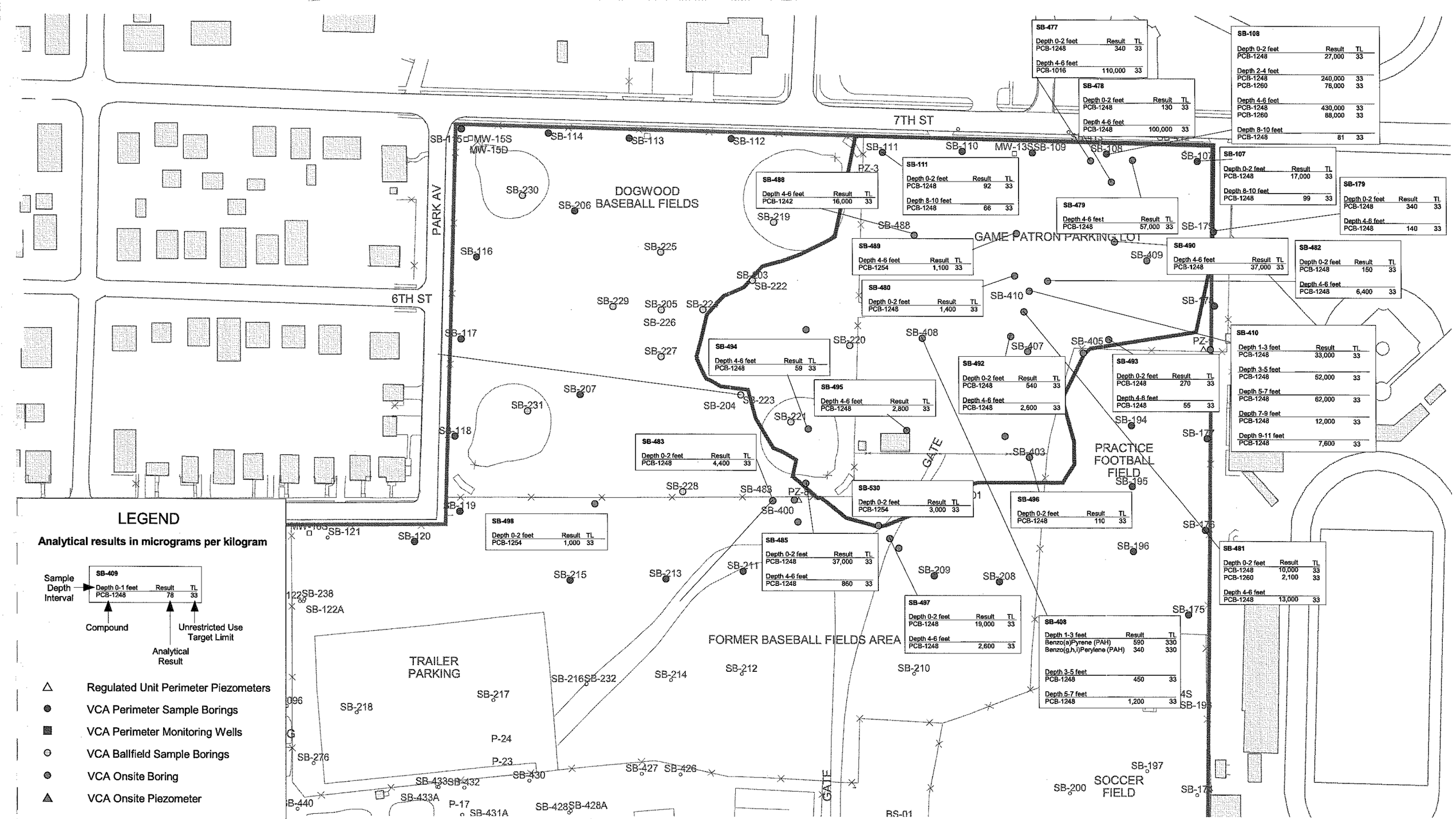
N

100 0 100 200 Feet

Figure B-3
Appendix B
Semi-Volatile Organic Compounds,
including Polycyclic Aromatic Hydrocarbon (PAH)
Target Limit Exceedances in Soil
for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval → **SB-409** | Depth 0-1 feet | Result 78 | TL 33

Compound | Analytical Result | Unrestricted Use Target Limit

- △ Regulated Unit Perimeter Piezometers
- ● VCA Perimeter Sample Borings
- ■ VCA Perimeter Monitoring Wells
- ○ VCA Ballfield Sample Borings
- ◉ VCA Onsite Boring
- ▲ VCA Onsite Piezometer

Site Condition Assessment Areas

2000 Property Boundary

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Figure B-3A
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), and Polychlorinated Biphenyl (PCB) Target Limit Exceedances in Soil for Unrestricted Use
Site B Focus Area

The Hoover Company, North Canton, Ohio

CH2MHILL

ERCULES\proj\hoover\gis\hvr_offsitetl_maps-part02.apr (Fig. B-3A- Site B_Offsite TL_PCB TL Exceed in Soil (11x17 layout).PDF) 18 Jan 2002 13:48 MPETERSH\MKE

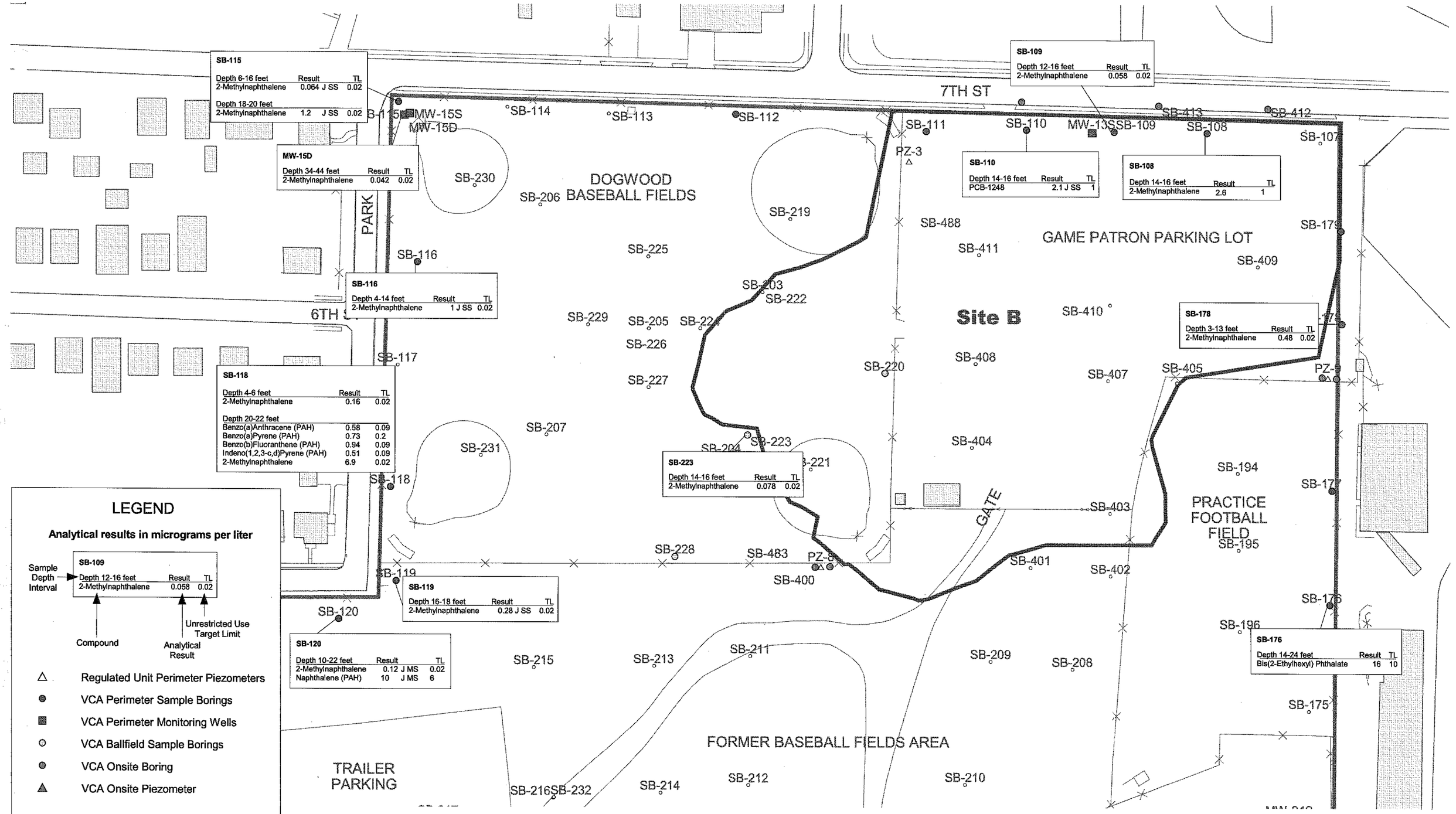
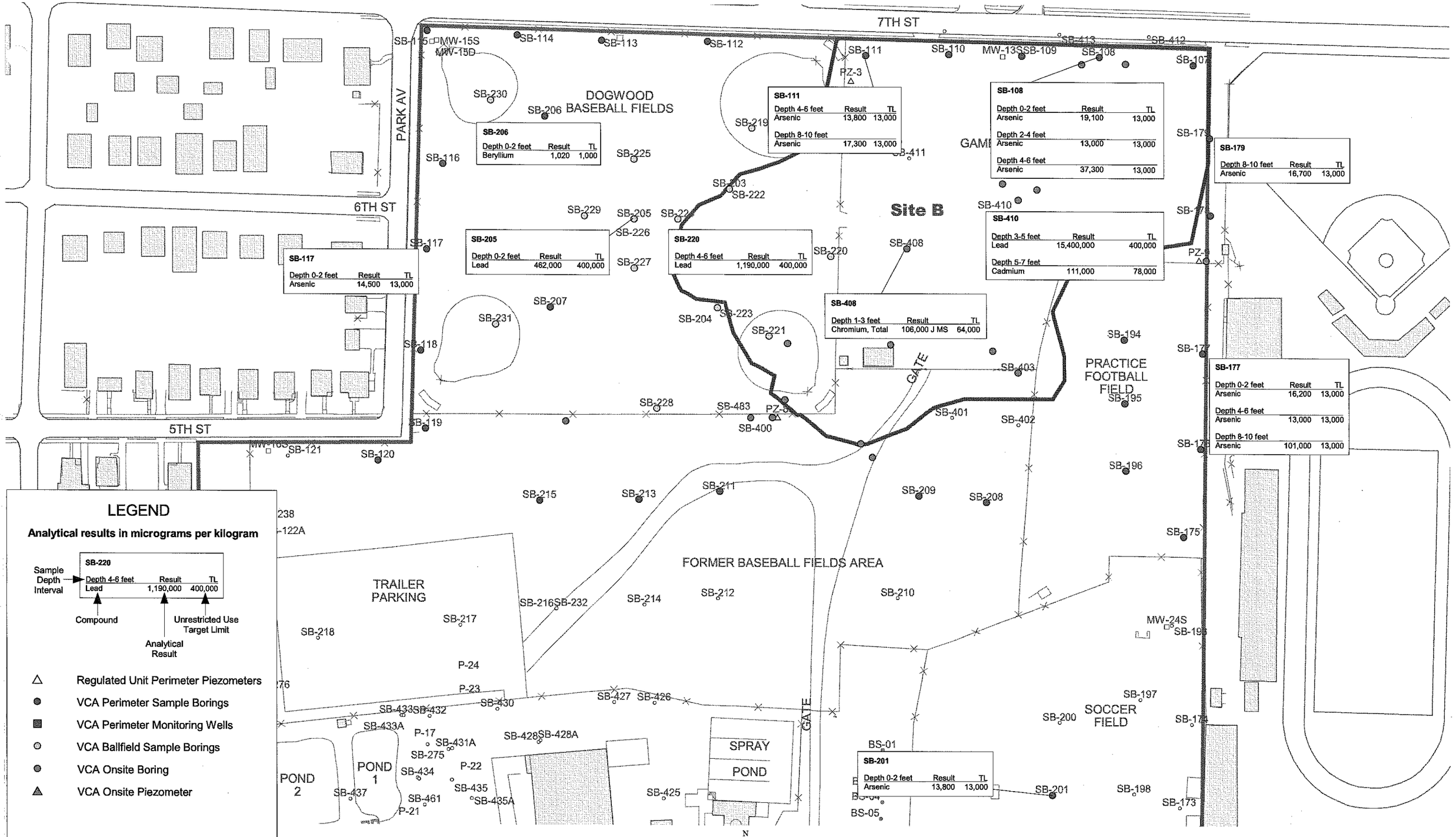


Figure B-4
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), and Polychlorinated Biphenyl (PCB) Target Limit Exceedances in Groundwater for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval → **SB-220**

Depth 4-6 feet	Result	TL
Lead	1,190,000	400,000

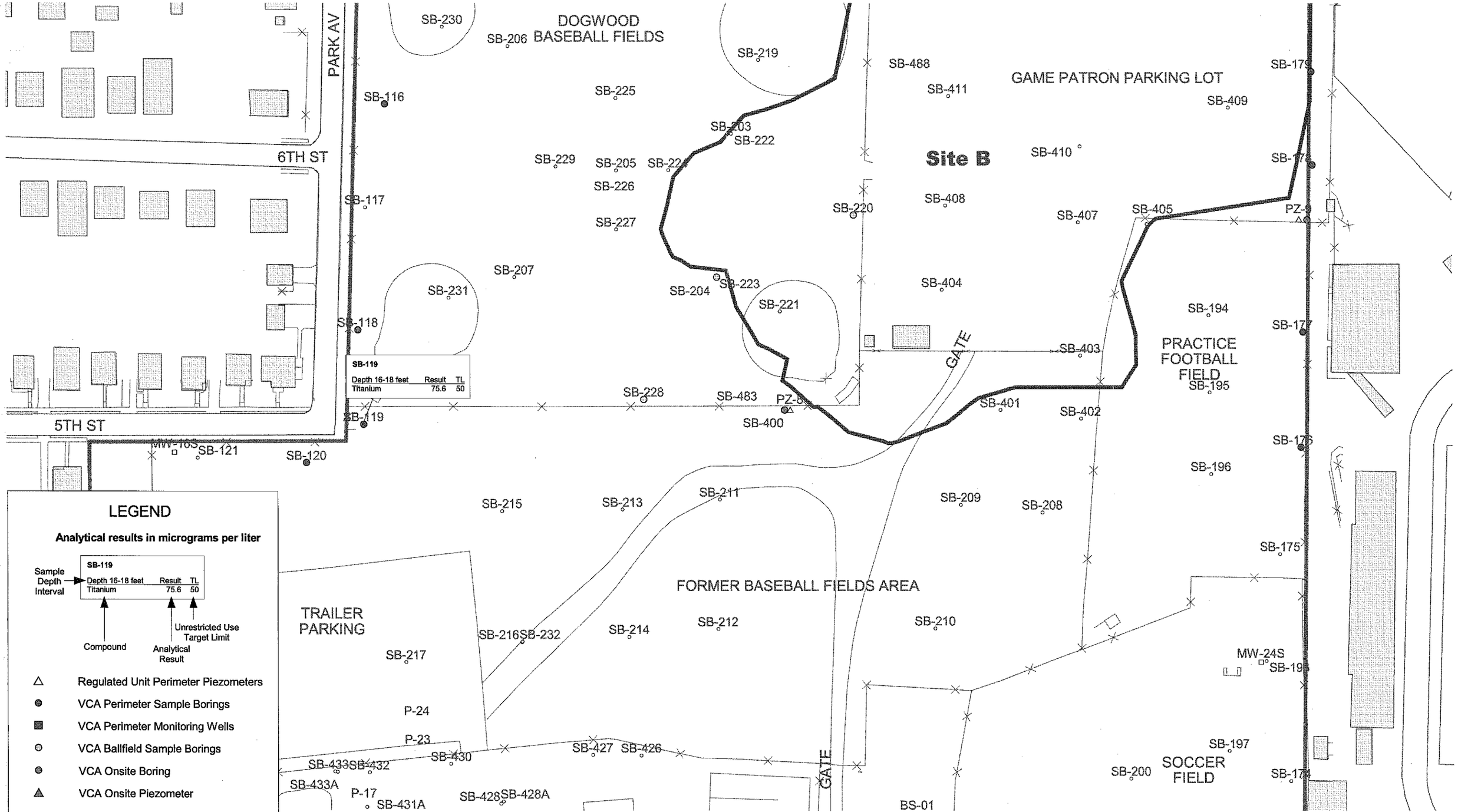
Compound; Analytical Result; Unrestricted Use Target Limit

- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- Site Condition Assessment Areas
- 2000 Property Boundary

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Figure B-5
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

Analytical results in micrograms per liter

Sample Depth Interval → SB-119 | Depth 16-18 feet | Result | TL | Titanium | 75.6 | 50

Compound; Analytical Result; Unrestricted Use Target Limit

- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Onsite Boring
- VCA Onsite Piezometer
- Site Condition Assessment Areas
- 2000 Property Boundary

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

Figure B-6
Appendix B
Dissolved Metals Target Limit Exceedances in Groundwater
for Unrestricted Use
Site B Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

NO DETECTIONS ABOVE TARGET LEVEL

5TH ST

TRAILER PARKING

FORMER BASEBALL FIELDS AREA

PRACTICE FOOTBALL FIELD

SOCCER FIELD

SPRAY POND

POND 1

BUILDING 35

STACK

GATE

GATE

SB-117 SB-227 SB-491 SB-220 SB-408 SB-407 SB-405 PZ-9 SB-406 SB-207 SB-207 SB-223 SB-204 SB-231 SB-404 SB-221 SB-494 SB-495 SB-496 SB-403 SB-194 SB-177 SB-118 SB-228 PZ-8 SB-119 SB-498 SB-483 SB-400 SB-523 SB-401 SB-402 SB-195 SB-484 SB-176 MW-16S SB-121 SB-120 SB-497 SB-531 SB-196 SB-211 SB-215 SB-213 SB-209 SB-208 SB-122 SB-238 SB-122A SB-532 SB-499 SB-533 SB-175 SB-216 SB-232 SB-214 SB-212 SB-210 SB-217 MW-24S SB-19 SB-218 SB-503 P-24 SB-504 SB-505 SB-502 P-23 SB-197 SB-200 SB-174 SB-432 SB-430 SB-427 SB-426 SB-433A P-17 SB-431A SB-428 SB-428A SB-506 BS-01 SB-275 SB-431 P-22 BS-02 SB-434 SB-434A BS-03 SB-201 SB-198 SB-437 SB-461 SB-435 SB-435A SB-425 BS-04 SB-173 P-21 BS-05 BS-06 BS-07 MW-12 SB-436 P-19 GP-055 SB-424 BS-08 GP-056 SB-429A SB-429 SB-423 SB-202 SB-199 P-18 BS-09

LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval →	SB-159		
	Depth 0-2 feet	Result	TL
Compound →	Benzo(a)Pyrene (PAH)	530	330
	Phenanthrene (PAH)	1,100	330

Compound

Analytical Result

Unrestricted Use Target Limit

- Regulated Unit Background Soil Sample Borings
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Onsite Boring
- Site Condition Assessment Areas
- 2000 Property Boundary

N

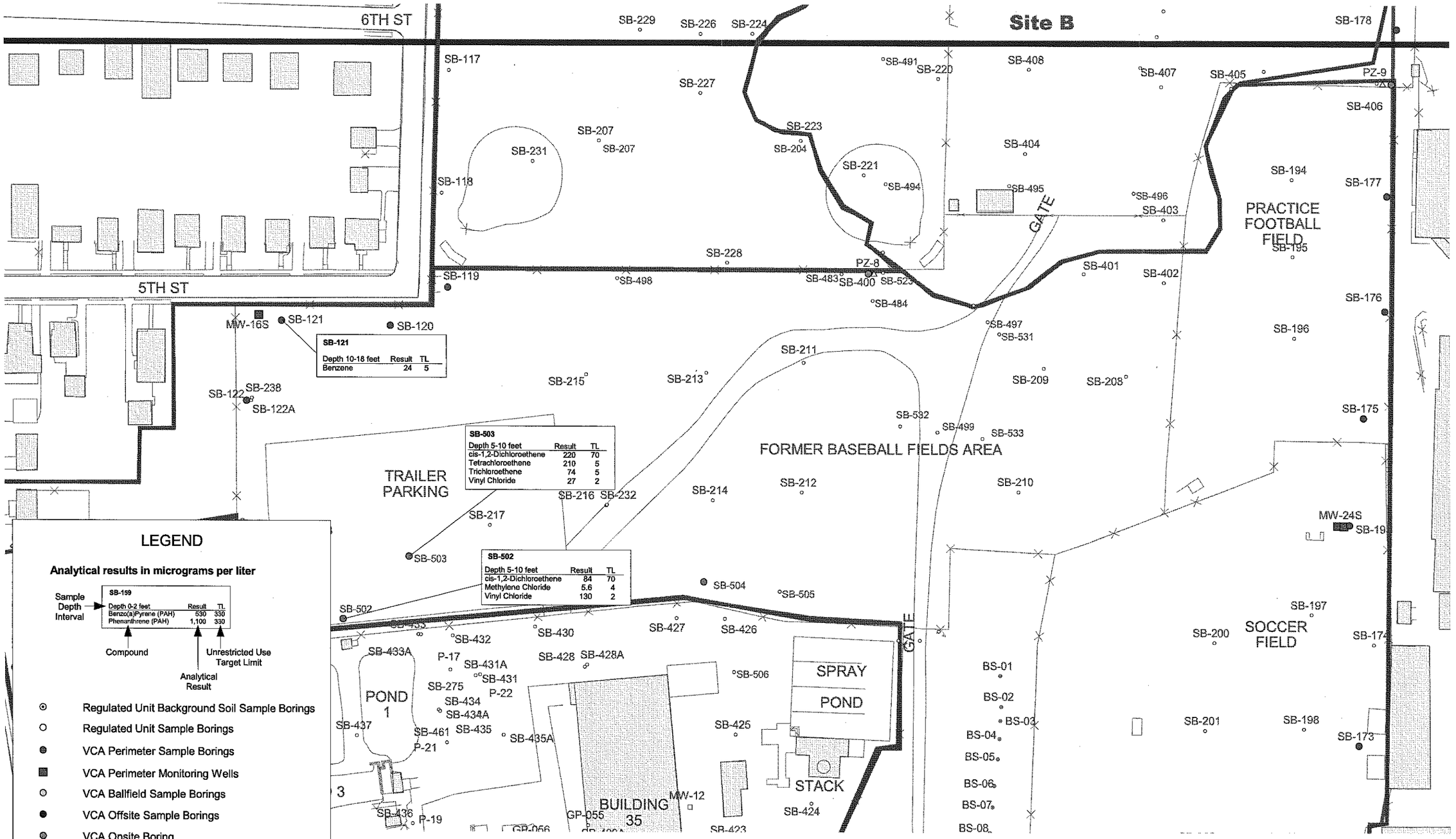
100 0 100 200 300 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-7 - Soccer/LL Fields_Offsite TL_VOC TL Exceed in Soil (11x17 layout).PDF) 18 Jan 2002 9:18 MPETERSH\MKE

Figure B-7
Appendix B
Volatile Organic Compound Target Limit Exceedances in Soil
for Unrestricted Use
Soccer/Little League Field Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-8 - Soccer/LL Fields_Offsite TL_VOC TL Exceed in GW (11x17 layout).PDF) 18 Jan 2002 9:56 MPETERSH\MKE

Figure B-8
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater
for Unrestricted Use
Soccer/Little League Field Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

Site B

6TH ST

5TH ST

SB-400
Depth 0-1 feet	Result	TL
Pcb-1248	5,100	33
Depth 3-5 feet		
Pcb-1248	1,200	33
Depth 5-7 feet		
Pcb-1248	59	33
Depth 7-9 feet		
Pcb-1248	240	33

SB-495
Depth 4-6 feet	Result	TL
Pcb-1248	2,800	33

SB-493
Depth 0-2 feet	Result	TL
Pcb-1248	270	33
Depth 4-6 feet		
Pcb-1248	55	33

SB-496
Depth 4-6 feet	Result	TL
Pcb-1248	110	33

SB-498
Depth 0-2 feet	Result	TL
Pcb-1248	1,000	33

SB-483
Depth 0-2 feet	Result	TL
Pcb-1248	4,400	33

SB-497
Depth 0-2 feet	Result	TL
Pcb-1248	19,000	33
Depth 4-6 feet		
Pcb-1248	2,600	33

SB-530
Depth 4-6 feet	Result	TL
Pcb-1248	3,000	33

SB-238
Depth 5-8 feet	Result	TL
2-Methylnaphthalene	0.063	0.02
Depth 20-22 feet		
2-Methylnaphthalene	0.03	0.02

SB-499
Depth 0-2 feet	Result	TL
Pcb-1248	22,000	33
Depth 2-4 feet		
Pcb-1248	74	33

SB-502
Depth 0-2 feet	Result	TL
Pcb-1248	20,000	33
Depth 2-4 feet		
Pcb-1248	920	33

SB-500
Depth 0-2 feet	Result	TL
Pcb-1248	9,600	33
Depth 2-4 feet		
Pcb-1248	410	33

BASEBALL FIELDS AREA

PRACTICE FOOTBALL FIELD

SOCCER FIELD

POND 1

SPRAY POND

STACK

BUILDING 35

GATE

SB-117 SB-118 SB-119 SB-120 SB-121 SB-122 SB-122A SB-218 SB-231 SB-227 SB-228 SB-229 SB-226 SB-224 SB-220 SB-491 SB-408 SB-407 SB-405 SB-493 PZ-9 SB-178 SB-406 SB-223 SB-204 SB-221 SB-494 SB-404 SB-495 SB-496 SB-403 SB-194 SB-177 SB-195 SB-485 PZ-8 SB-483 SB-400 SB-523 SB-401 SB-402 SB-176 SB-196 SB-484 SB-530 SB-497 SB-531 SB-211 SB-215 SB-213 SB-209 SB-208 SB-175 SB-532 SB-499 SB-533 SB-212 SB-214 SB-216 SB-232 SB-210 SB-217 SB-503 P-24 MW-24S SB-19 SB-504 SB-505 SB-502 P-23 SB-197 SB-200 SB-174 SB-500 SB-432 SB-430 SB-427 SB-426 SB-433A P-17 SB-431A SB-431 SB-428 SB-428A SB-506 BS-01 BS-02 BS-03 BS-04 BS-05 BS-06 BS-07 BS-08 BS-09 SB-201 SB-198 SB-173 SB-275 P-22 SB-434 SB-434A SB-437 SB-461 SB-435 SB-435A P-21 SB-425 MW-12 SB-424 SB-423 SB-436 P-19 GP-055 GP-056 SB-429A SB-429 P-18 W-09 GP-054 GP-053 SB-202 SB-199 BG-12

LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval → SB-159 | Depth 0-2 feet | Benzo(a)Pyrene (PAH) 530 330 | Phenanthrene (PAH) 1,100 330

Compound; Analytical Result; Unrestricted Use Target Limit

- Regulated Unit Background Soil Sample Borings
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Ballfield Sample Borings
- VCA Offsite Sample Borings
- VCA Onsite Boring
- Site Condition Assessment Areas
- 2000 Property Boundary

N

100 0 100 200 300 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-9 - Soccer/LL Fields_Offsite TL_SVOC TL Exceed in Soil (11x17 layout).PDF) 18 Jan 2002 9:23 MPETERSH\MKE

Figure B-9
Appendix B
Polycyclic Aromatic Hydrocarbon (PAH) and Polychlorinated Biphenyl (PCB)
Target Limit Exceedances in Soil
for Unrestricted Use
Soccer/Little League Field Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

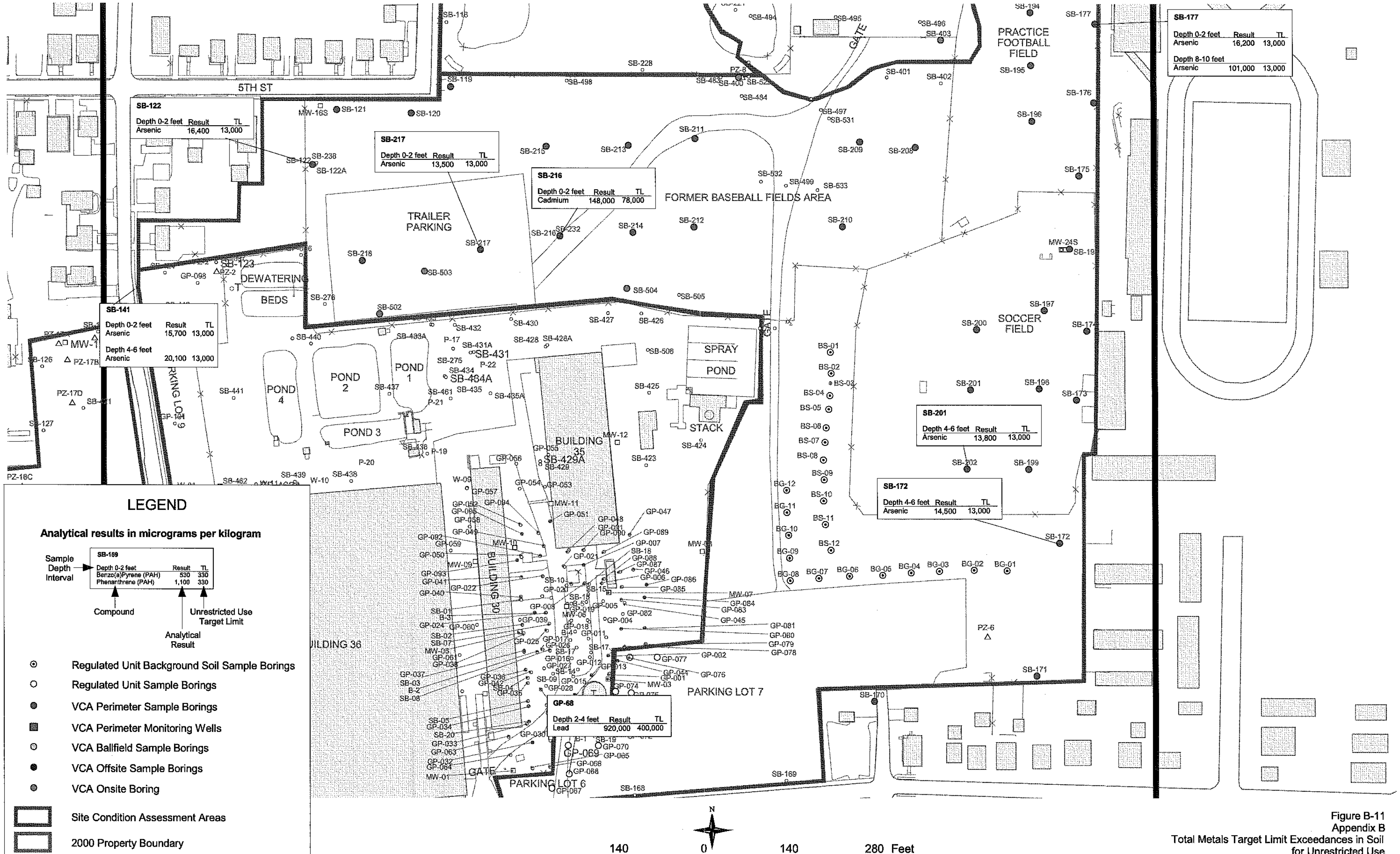


Figure B-11
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Soccer/Little League Field Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-11 - Soccer/LL Fields_Offsite TL_Total Metals TL Exceed in Soil (11x17 layout).PDF) 27 Sep 2001 11:21 MPETERSH\MKE

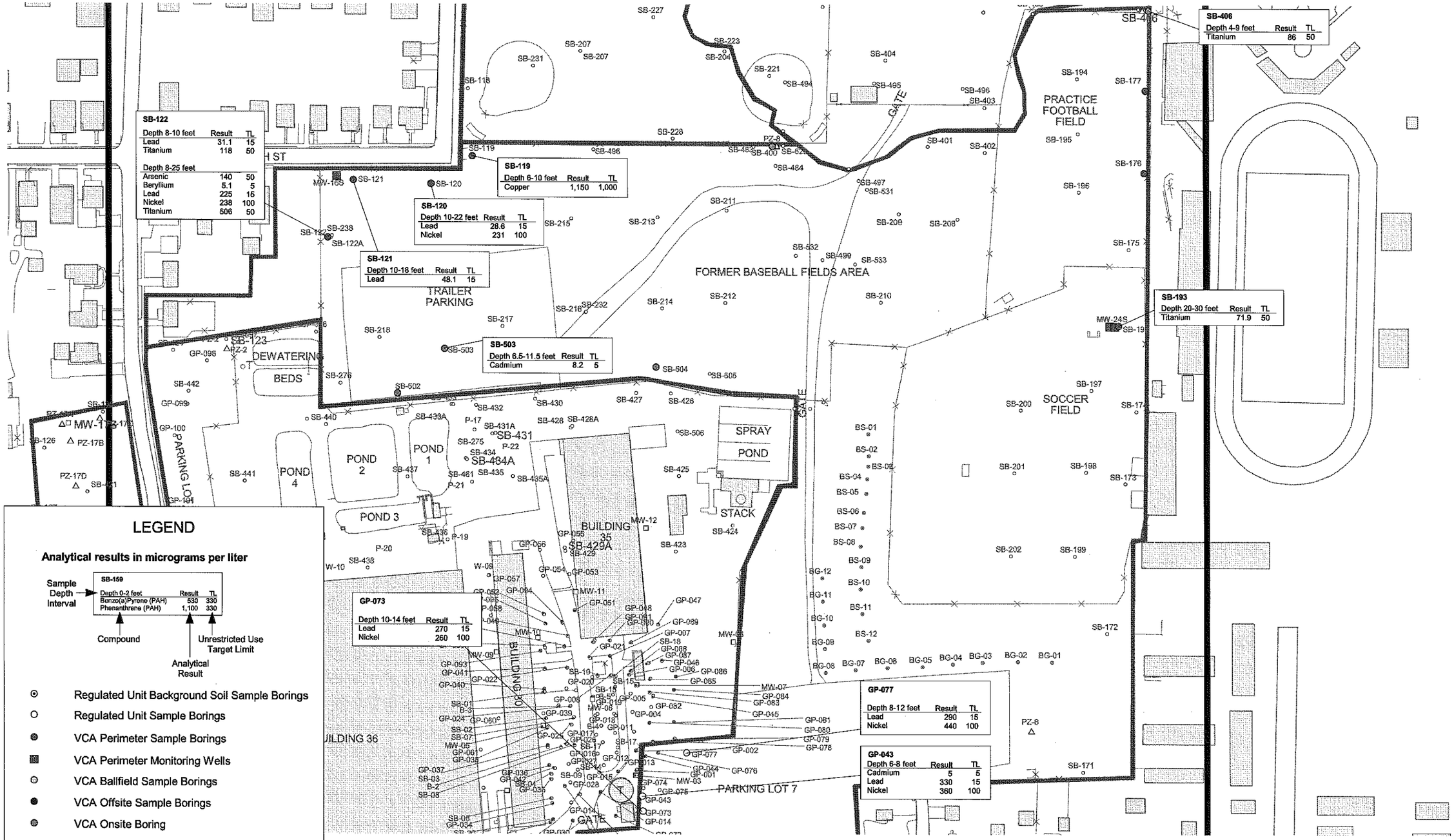
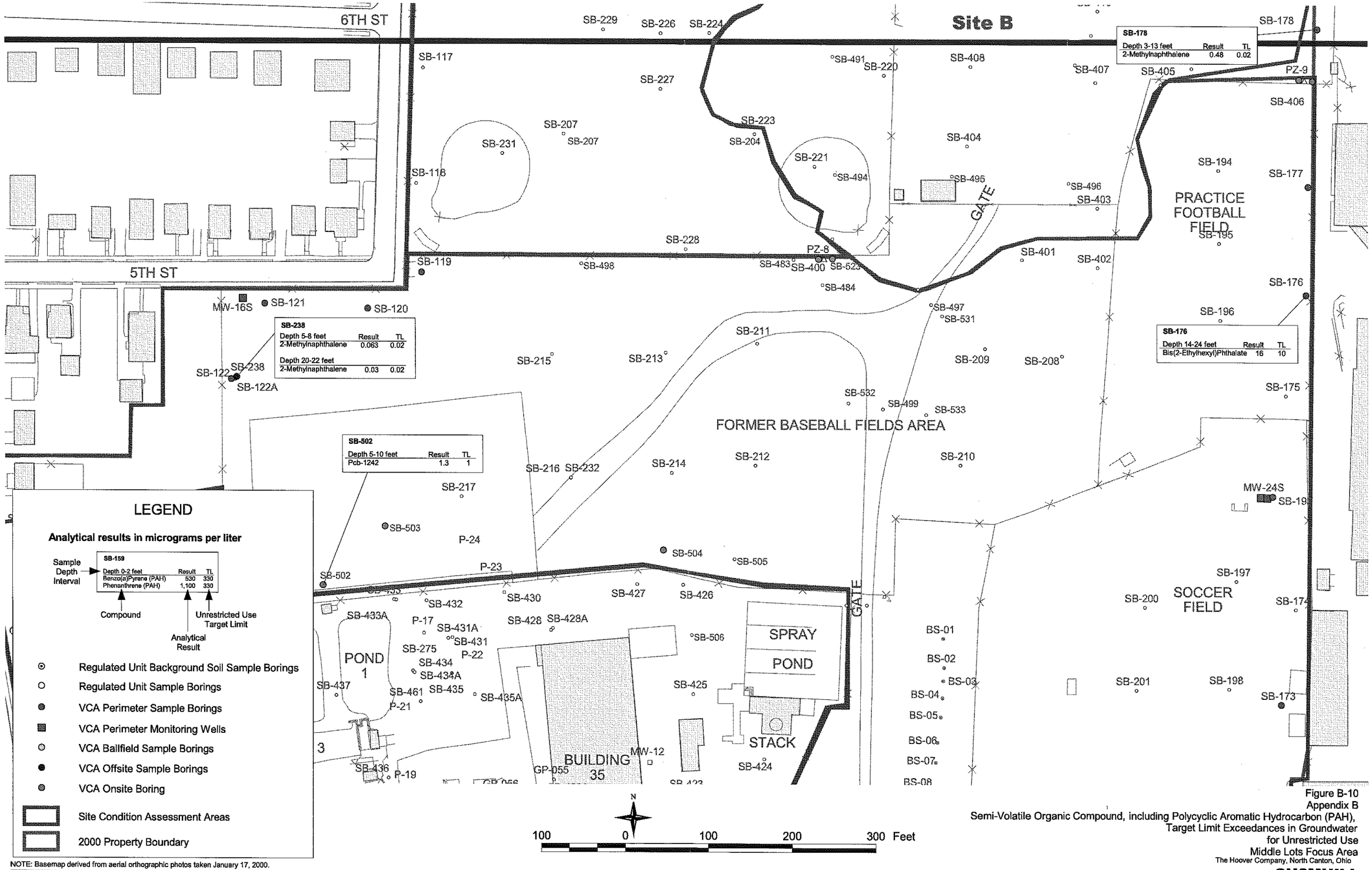


Figure B-12
Appendix B
Total Metals Target Limit Exceedances
in Groundwater for Unrestricted Use
Soccer/Little League Field Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-12 - Soccer/LL Fields_Offsite TL_Total Metals TL Exceed in GW (11x17 layout).PDF) 18 Jan 2002 9:59 MPETERSH\MKE

CH2MHILL

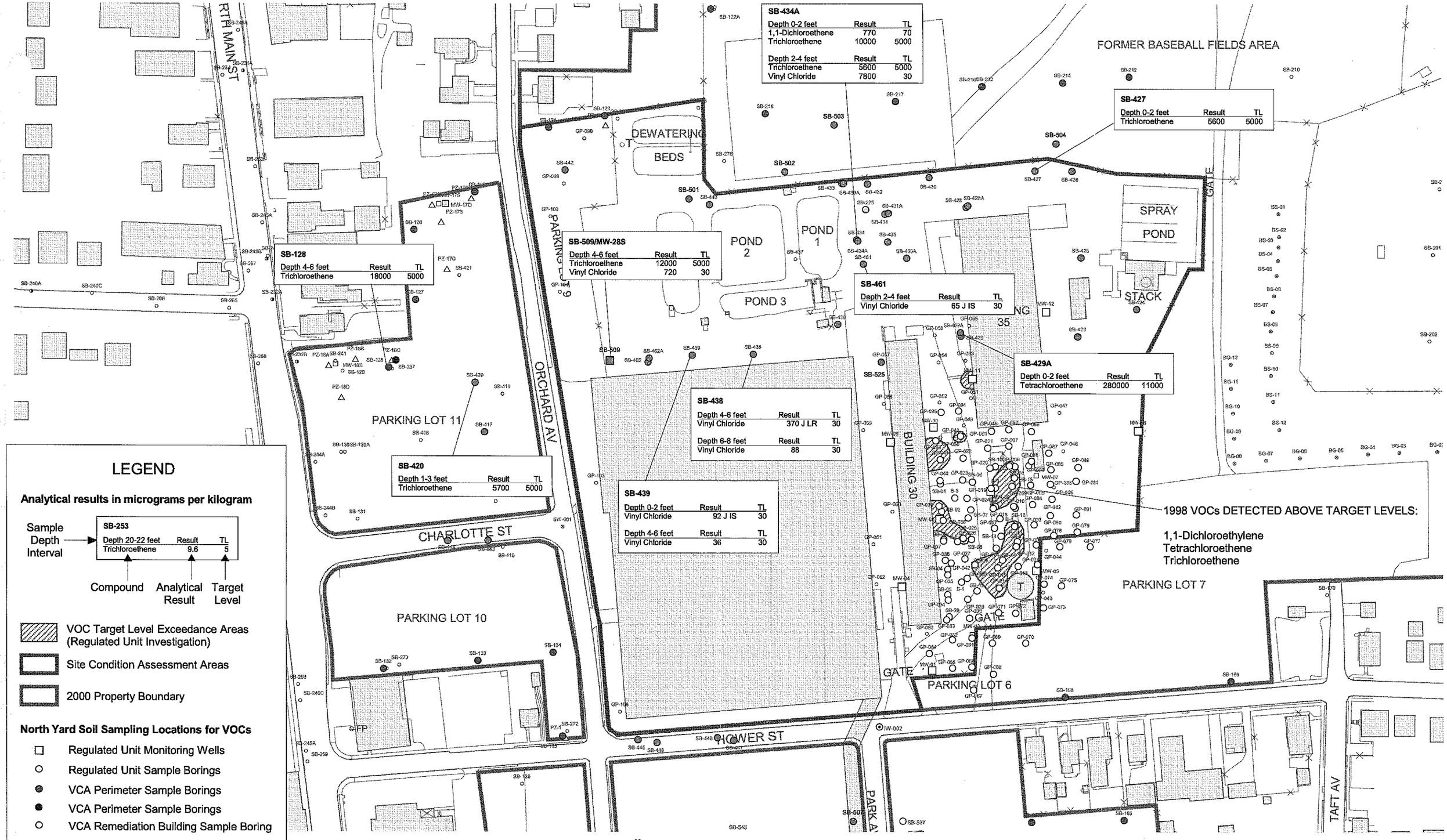


NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitefl_maps-part01.apr (Fig. B-10 - Soccer/LL Fields_Offsite TL_SVOC TL Exeed in GW (11x17 layout).PDF) 18 Jan 2002 9:58 MPETERSH\MKE

Figure B-10
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), Target Limit Exceedances in Groundwater for Unrestricted Use
Middle Lots Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval

SB-253		
Depth 20-22 feet	Result	TL
Trichloroethene	9.6	5

Compound — Analytical Result — Target Level

- VOC Target Level Exceedance Areas (Regulated Unit Investigation)
- Site Condition Assessment Areas
- 2000 Property Boundary

North Yard Soil Sampling Locations for VOCs

- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Sample Borings
- VCA Remediation Building Sample Boring
- VCA Onsite Boring
- VCA Onsite Monitoring Well

All other sampling locations are minimized.

N

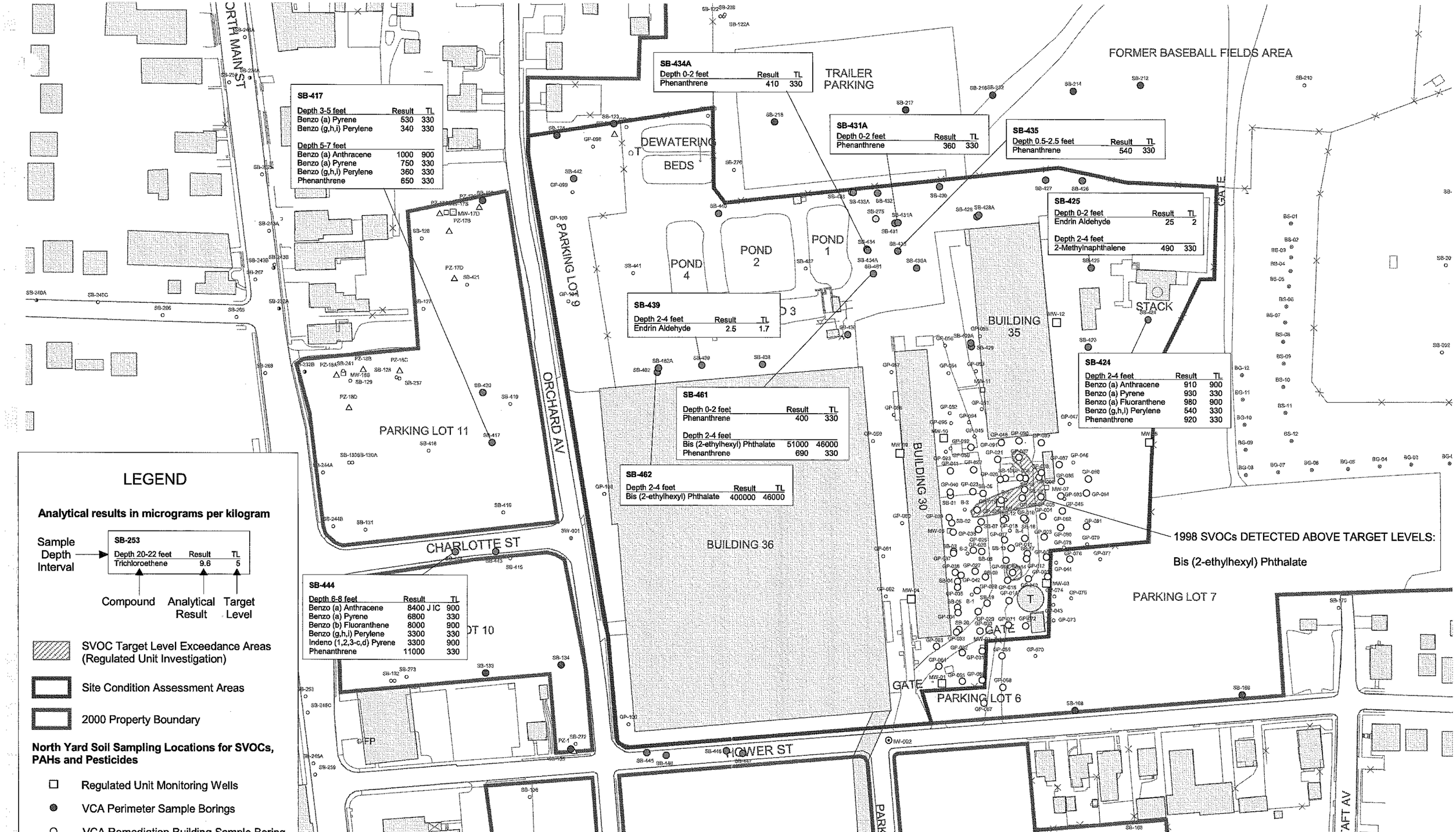
100 0 100 200 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-13 - North Yard_Offsite TL_VOC TL Exceed in Soil.PDF) 18 Jan 2002 14:07 MPETERSH\MKE

Figure B-13
Appendix B
VOC Target Limit Exceedances in Soil
for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-15 - North Yard_Offsite TL_SVOC TL Exceed in Soil.PDF) 18 Jan 2002 14:13 MPETERSH\MKE

Figure B-15
Appendix B
SVOC, PAH and Pesticide Target Limit Exceedances in Soil
for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

MW-17S

Depth 5-15 feet	Result	TL
Tetrachloroethene	77	5
Trichloroethene	21	5
Depth 4-14 feet	**Result**	**TL**
Tetrachloroethene	71	5
Trichloroethene	15	5

SB-125

Depth 8-10 feet	Result	TL
Tetrachloroethene	17	5
Trichloroethene	6.2	5

SB-502

Depth 5-10 feet	Result	TL
cis-1,2-Dichloroethene	84	70
Methylene Chloride	5.6	4
Vinyl Chloride	130	2

SB-503

Depth 6.5-11.5 feet	Result	TL
cis-1,2-Dichloroethene	220	70
Tetrachloroethene	210	5
Trichloroethene	74	5
Vinyl Chloride	27	2

SB-432

Depth 8-13 feet	Result	TL
cis-1,2-Dichloroethene	11000	70
Tetrachloroethene	16000	5
Trichloroethene	5100	5

SB-435

Depth 7-12 feet	Result	TL
Vinyl Chloride	3.5	2

PZ-17A

Depth 5-15 feet	Result	TL
Tetrachloroethene	53	5
Trichloroethene	16	5

SB-126

Depth 6-8 feet	Result	TL
Tetrachloroethene	21	5

SB-127

Depth 6-8 feet	Result	TL
cis-1,2-Dichloroethene	340 J HT	70
Trichloroethene	8.7 J HT	5
Vinyl Chloride	40 J HT	2
Depth 35-37 feet	**Result**	**TL**
Vinyl Chloride	5.5	2

MW-28S

Depth 5-15 feet	Result	TL
cis-1,2-Dichloroethene	91000	70
Trichloroethene	59000	5
Vinyl Chloride	7000	2

SB-425

Depth 7-12 feet	Result	TL
Vinyl Chloride	5.6	2

SB-525

Depth 14-19 ft	Result	TL
Tetrachloroethylene	82	5
Trichloroethylene	160	5
cis-1,2-dichloroethylene	800	70
BEDROCK		
Depth 23-28 ft		
Tetrachloroethylene	370	5
Trichloroethylene	180	5
cis-1,2-dichloroethylene	540	70
Depth 29-39 ft		
Tetrachloroethylene	40000	5
Trichloroethylene	4400	5
cis-1,2-dichloroethylene	1900	70
Depth 39-49 ft		
Tetrachloroethylene	26000	5
Trichloroethylene	2500	5
cis-1,2-dichloroethylene	640	70

SB-128

Depth 10-35 feet	Result	TL
cis-1,2-Dichloroethene	1,200	70
Vinyl Chloride	270	2

SB-423

Depth 7-12 feet	Result	TL
Vinyl Chloride	3.5	2

SB-436

Depth 6-11 feet	Result	TL
cis-1,2-Dichloroethene	5500	70
Tetrachloroethene	66000	5
Trichloroethene	84000	5

SB-132

Depth 14-16 feet	Result	TL
Tetrachloroethene	15	5
Trichloroethene	30	5
Depth 25-27 feet		
cis-1,2-Dichloroethene	86	70
Trichloroethene	32	5

SW-003R

Depth 7-8 ft	Result	TL
Tetrachloroethylene	10	5
Trichloroethylene	12	5
cis-1,2-dichloroethylene	50	70
Vinyl Chloride	5.6	2

SB-439

Depth 12-17 feet	Result	TL
cis-1,2-Dichloroethene	110000	70
Trichloroethene	8000	5
Vinyl Chloride	23000	2

PZ-10

Depth 5-15 feet	Result	TL
cis-1,2-Dichloroethene	340	70
Trichloroethene	60	5

SW-001

Depth approx. 8.5 feet	Result	TL
Tetrachloroethene	10	5
Trichloroethene	5.5	5

SB-444

Depth 11-16 feet	Result	TL
Tetrachloroethene	6.4	5

SB-134

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	960	70
Tetrachloroethene	760	5
Trichloroethene	680	5

SB-133

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	320	70
Tetrachloroethene	190	5
Trichloroethene	350	5
Depth 22-24 feet	**Result**	**TL**
cis-1,2-Dichloroethene	180	70
Tetrachloroethene	21	5
Trichloroethene	88	5

SB-135

Depth 10-20 feet	Result	TL
cis-1,2-Dichloroethene	410	70
Trichloroethene	340	5

SB-507

Depth 13-18 feet	Result	TL
cis-1,2-Dichloroethene	2700	70
Tetrachloroethene	310	5
Trichloroethene	5000	5

SW-008R

Depth 4-5 ft	Result	TL
Tetrachloroethylene	110	5
Trichloroethylene	32	5
cis-1,2-dichloroethylene	34	70

SW-007R

Depth 5-6 ft	Result	TL
Tetrachloroethylene	11	5
Trichloroethylene	5.9	5
cis-1,2-dichloroethylene	6.6	70

SU-001

Depth 2-4 ft	Result	TL
Tetrachloroethylene	280	5
Trichloroethylene	83	5
cis-1,2-dichloroethylene	82	70

1998 VOCs DETECTED ABOVE TARGET LEVELS:

1,1-Dichloroethene
cis-1,2-Dochloroethene
Tetrachloroethene
1,1,1-Trichloroethane
Trichloroethene
Vinyl Chloride

LEGEND

Analytical results in micrograms per liter

Sample Depth Interval → SB-253 | Depth 20-22 feet | Result 9.6 | TL 5

Compound | Analytical Result | Target Level

- VOC Target Level Exceedance Areas (Regulated Unit Investigation)
- Site Condition Assessment Areas
- 2000 Property Boundary

North Yard Groundwater Sampling Locations for VOCs

- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample Borings
- VCA Sump Sampling Location
- VCA Onsite Boring
- Regulated Unit Monitoring Wells
- VCA Sanitary Sewer Sampling Location
- VCA Storm Sewer Sampling Location

All other sampling locations are minimized.

N

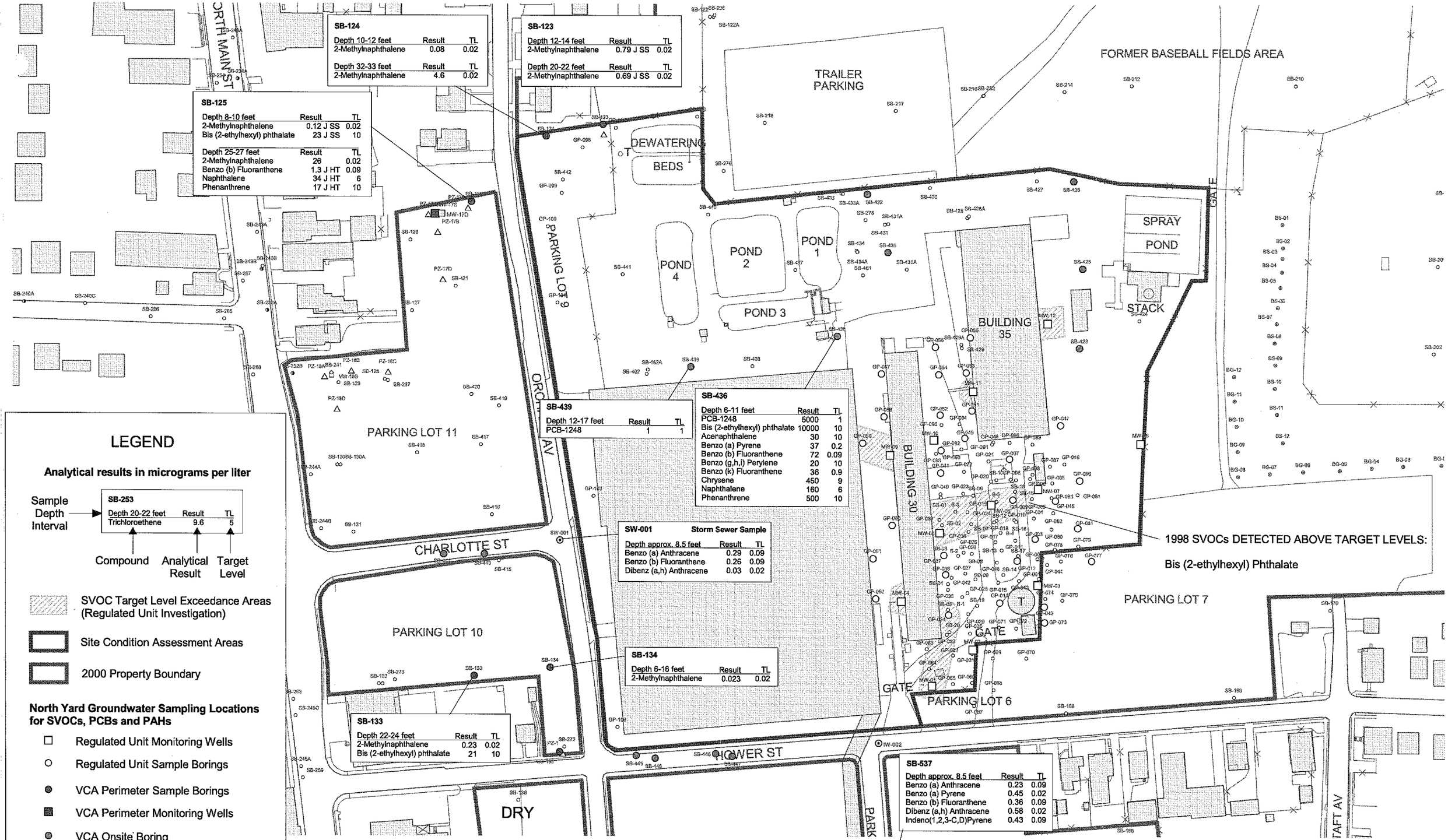
100 0 100 200 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-14 - North Yard_Offsite TL_VOC TL Exceed in GW (layout).PDF) 18 Jan 2002 14:10 MPETERSH\MKE

Figure B-14
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

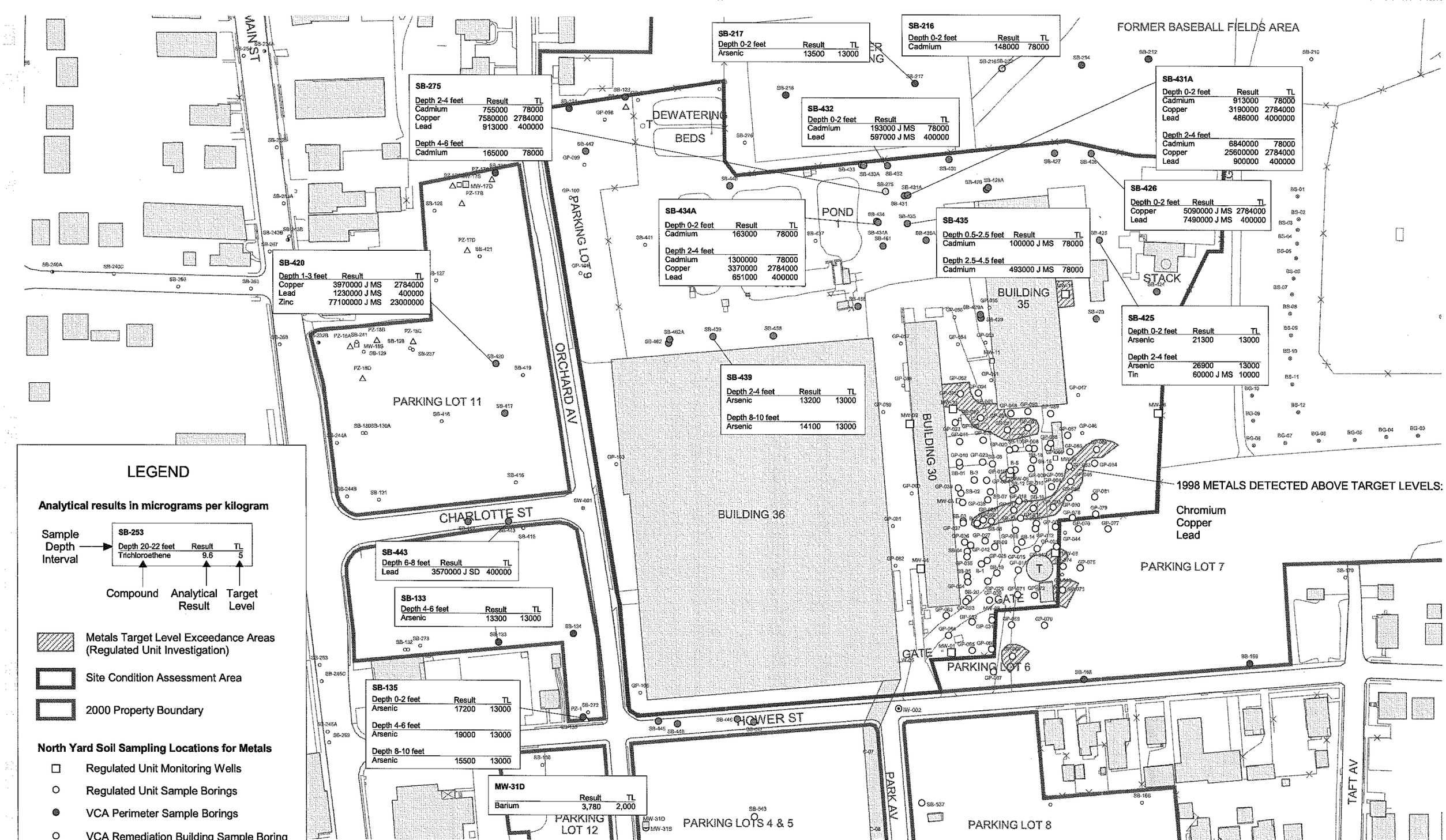


NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-16 - North Yard_Offsite TL_SVOC TL Exceed in GW.PDF) 18 Jan 2002 14:16 MPETERSH\MKE

Figure B-16
Appendix B
SVOC, PCB and PAH Target Limit Exceedances in Groundwater for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval

SB-253		
Depth 20-22 feet	Result	TL
Trichloroethene	9.6	5

Compound — Analytical Result — Target Level

Metals Target Level Exceedance Areas (Regulated Unit Investigation)

Site Condition Assessment Area

2000 Property Boundary

North Yard Soil Sampling Locations for Metals

- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- VCA Perimeter Sample Borings
- VCA Remediation Building Sample Boring
- VCA Onsite Boring

All other sampling locations are minimized.

N

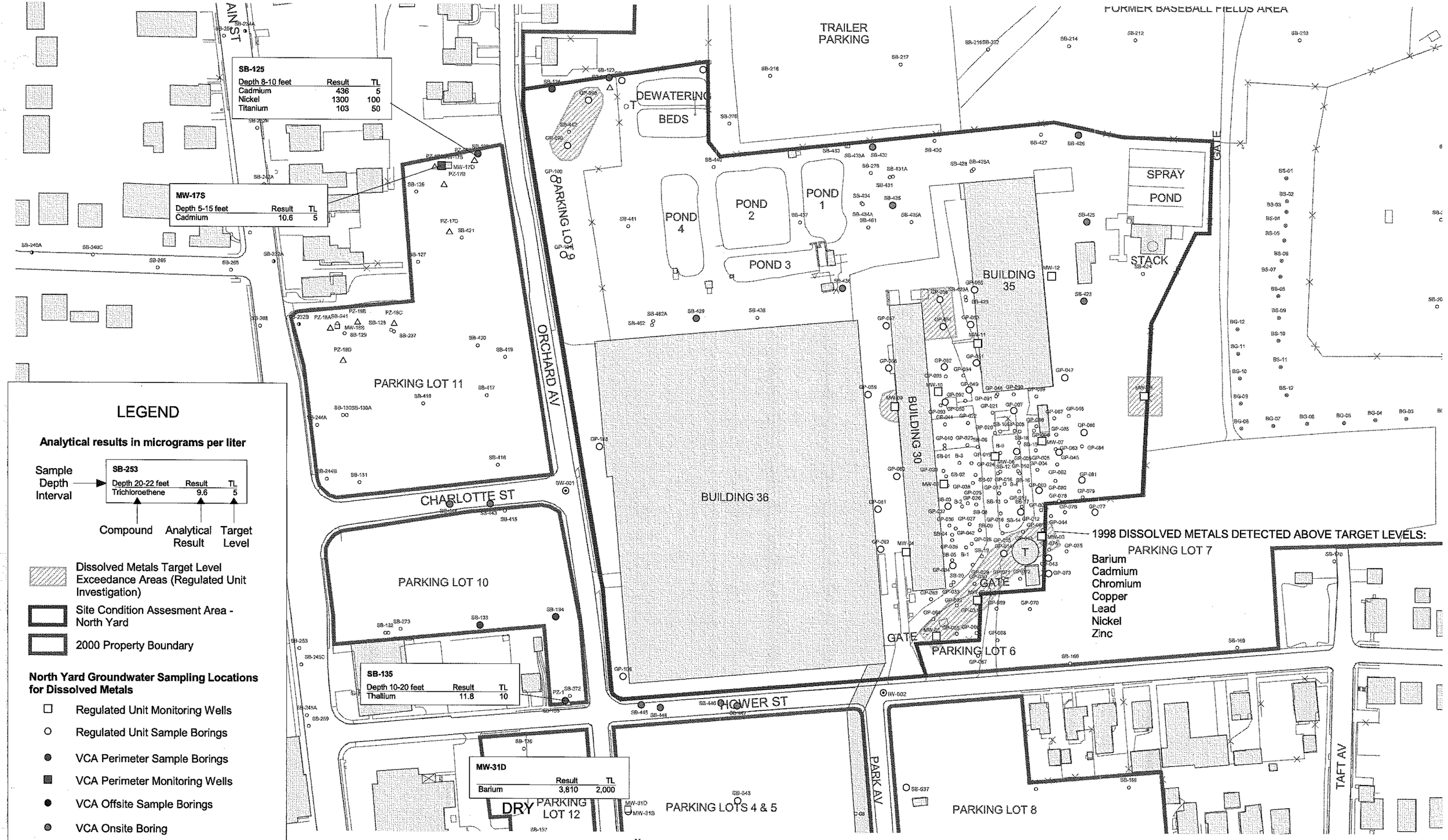
100 0 100 200 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-17 - North Yard_Offsite TL_Metals TL Exceed in Soil.PDF) 18 Jan 2002 14:18 MPETERSH\MKE

Figure B-17
Appendix B
Metals Target Limit Exceedances in Soil
for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

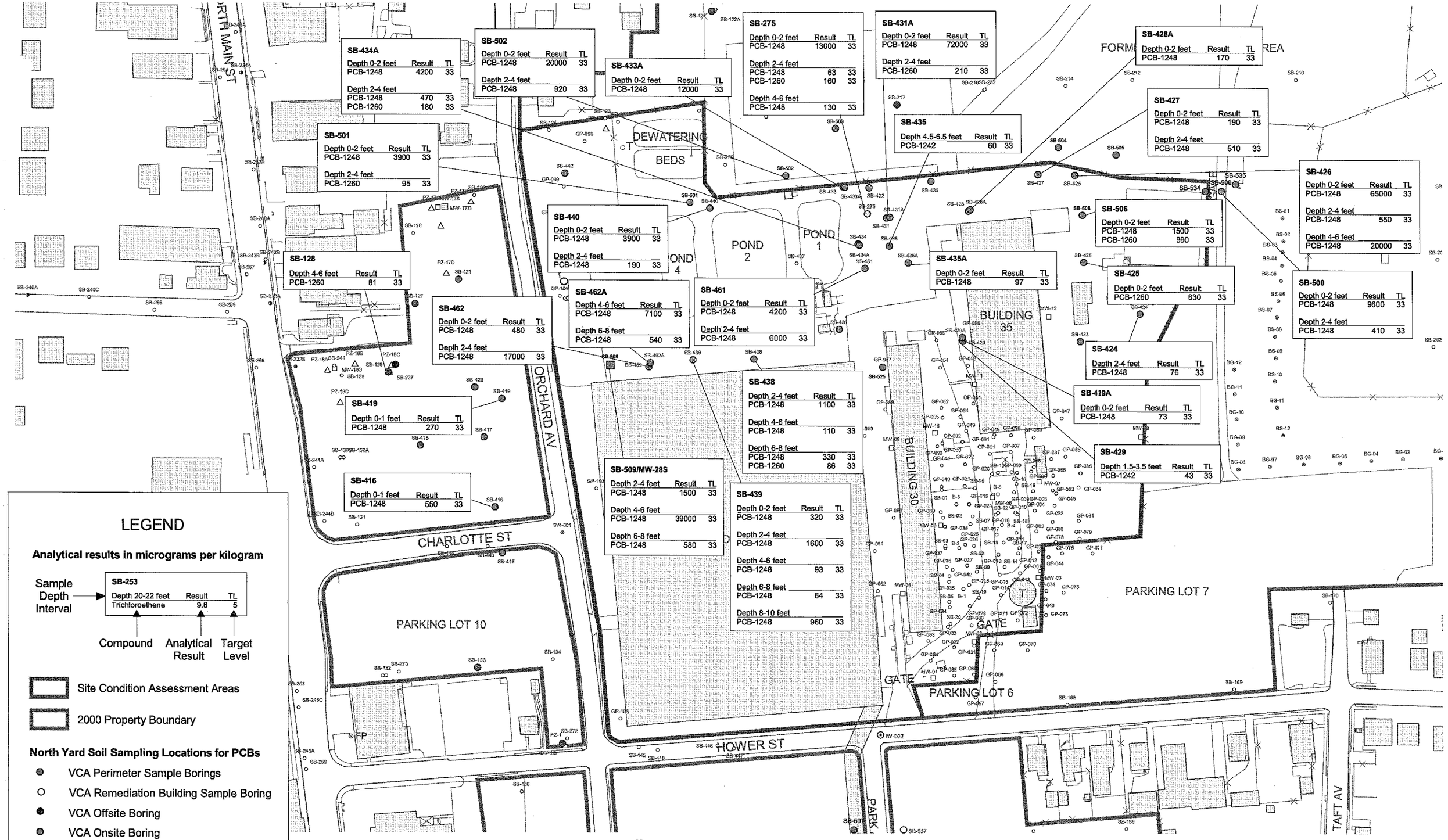


NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-18 - North Yard_Offsite TL_DissMetals TL Exceed in GW.PDF) 18 Jan 2002 14:21 MPETERSH\MKE

Figure B-18
Appendix B
Dissolved Metal Target Limit Exceedances in Groundwater for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval

SB-253		
Depth 20-22 feet	Result	TL
Trichloroethene	9.6	5

Compound — Analytical Result — Target Level

Site Condition Assessment Areas

2000 Property Boundary

North Yard Soil Sampling Locations for PCBs

- VCA Perimeter Sample Borings
- VCA Remediation Building Sample Boring
- VCA Offsite Boring
- VCA Onsite Boring
- VCA Onsite Monitoring Well

All other sampling locations are minimized.

N

100 0 100 200 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

d:\gis\hvr_onsite_nyard02.apr (Fig. B-19 - North Yard_Offsite TL_PCB TL Exceed in Soil (layout).PDF) 18 Jan 2002 14:28 MPETERSH\MKE

Figure B-19
Appendix B
PCB Target Limit Exceedances in Soil
for Unrestricted Use
North Yard Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

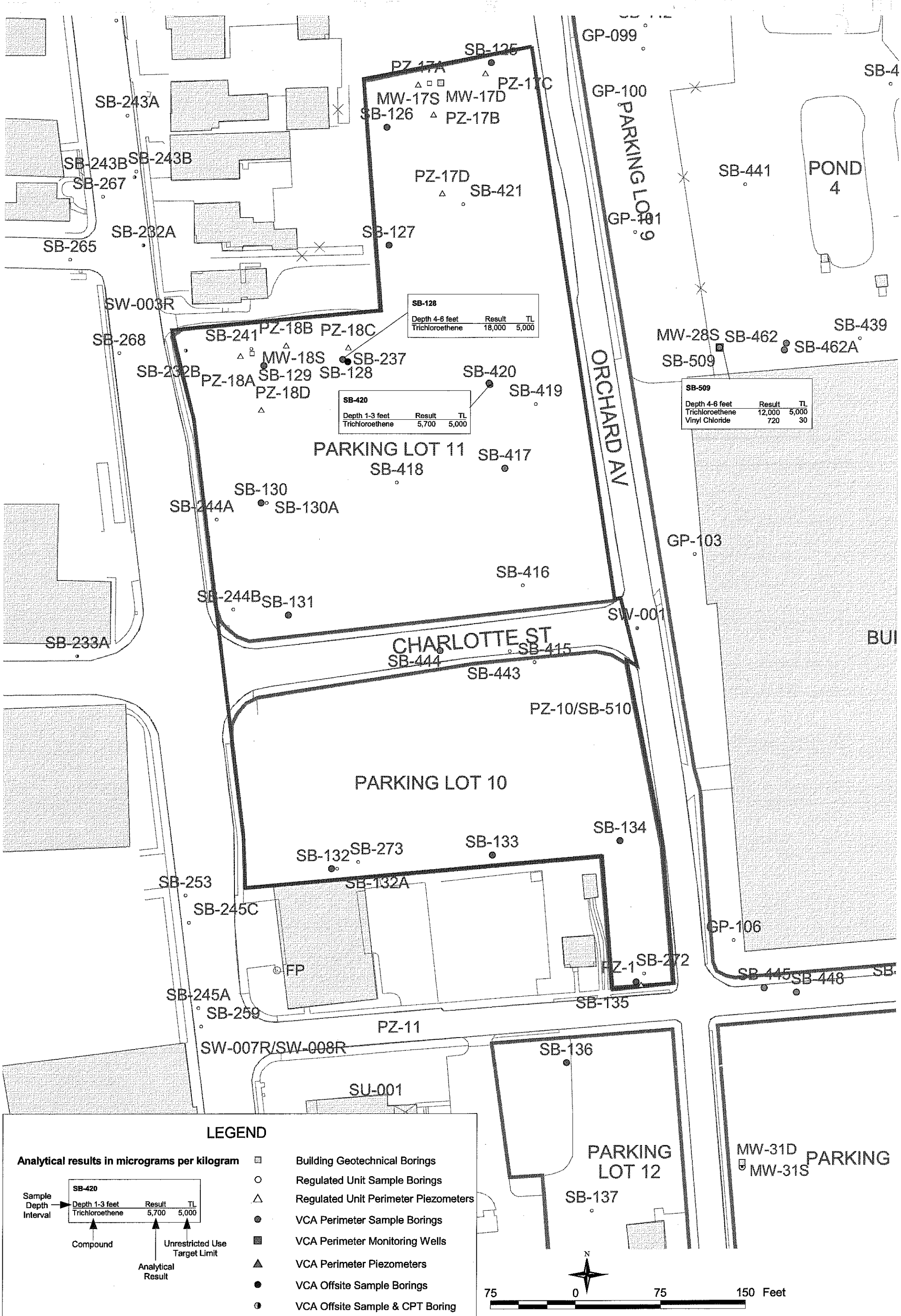


Figure B-20
Appendix B
Volatile Organic Compound Target Limit Exceedances in Soil
for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

CH2MHILL

SB-125

Depth 8-10 feet	Result	TL
Tetrachloroethene	17	5
Trichloroethene	6.2	5

PZ-17A

Depth 5-15 feet	Result	TL
Tetrachloroethene	53	5
Trichloroethene	16	5

SB-265

Depth 15-20 feet	Result	TL
Vinyl Chloride	130	2
Depth 34-42 feet		
Vinyl Chloride	13	2

SB-126

Depth 6-8 feet	Result	TL
Trichloroethene	21	5

MW-17S

Depth 5-15 feet	Result	TL
Tetrachloroethene	77	5
Trichloroethene	21	5
Depth 4-14 feet (07/01)		
Tetrachloroethene	71	5
Trichloroethene	15	5

GP-099

Depth 9-13 feet	Result	TL
cis-1,2-Dichloroethene	3,600 J	70
Tetrachloroethene	1,100 J	5
Trichloroethene	630 J	5
Vinyl Chloride	440 J	2

GP-100

Depth 14-18 feet	Result	TL
Tetrachloroethene	13	5
Trichloroethene	13	5

SB-232A

Depth 15-20 feet	Result	TL
Vinyl Chloride	21	2

MW-18S

Depth 14-24 feet	Date	Result	TL
cis-1,2-Dichloroethene	02/00	19,000	70
cis-1,2-Dichloroethene	02/00	16,000	70
cis-1,2-Dichloroethene		17,000	70
cis-1,2-Dichloroethene	07/01	23,000	70
Vinyl Chloride	03/00	5,100	2
Vinyl Chloride	03/00	4,000	2
Vinyl Chloride		4,500	2
Vinyl Chloride	07/01	5,000	2

SB-127

Depth 35-37 feet	Result	TL
Vinyl Chloride	5.5	2

GP-101

Depth 12-16 feet	Result	TL
Trichloroethene	5.2	5

SB-128

Depth 10-35 feet	Result	TL
cis-1,2-Dichloroethene	1,200	70
Vinyl Chloride	270	2

SW-003R

Depth 7-8 feet	Result	TL
Tetrachloroethene	10	5
Trichloroethene	12	5
Vinyl Chloride	5.6	2

SB-129

Depth 10-15 feet	Result	TL
cis-1,2-Dichloroethene	4,900	70
Vinyl Chloride	1,400	2
Depth 10-34 feet		
cis-1,2-Dichloroethene	2,500	70
Vinyl Chloride	550	2

MW-28S

Depth 5-15 feet	Result	TL
cis-1,2-Dichloroethene	91,000	70
Trichloroethene	59,000	5
Vinyl Chloride	7,000	5

SB-268

Depth 14-18 feet	Result	TL
cis-1,2-Dichloroethene	4,300	70
Vinyl Chloride	750	2
Depth 29-33 feet		
cis-1,2-Dichloroethene	4,300	70
Vinyl Chloride	920	2

SB-232B

Depth 8-12 feet	Result	TL
cis-1,2-Dichloroethene	2,500	70
Vinyl Chloride	290	2
Depth 17-20 feet		
cis-1,2-Dichloroethene	2,600	70
Vinyl Chloride	250	2
Depth 31-36 feet		
cis-1,2-Dichloroethene	1,200	70
Vinyl Chloride	300	2

GP-103

Depth 13-16 feet	Result	TL
cis-1,2-Dichloroethene	2,500	70
Tetrachloroethene	1,200	5
Trichloroethene	2,100	5

SB-444

Depth 11-16 feet	Result	TL
Tetrachloroethene	6.4	5

PZ-10

Depth 5-15 feet	Result	TL
cis-1,2-Dichloroethene	340	70
Trichloroethene	60	5

SB-133

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	320	70
Tetrachloroethene	190	5
Trichloroethene	350	5
Depth 22-24 feet		
cis-1,2-Dichloroethene	180	70
Tetrachloroethene	21	5
Trichloroethene	88	5

SB-132

Depth 14-16 feet	Result	TL
Tetrachloroethene	15	5
Trichloroethene	30	5
Depth 25-27 feet		
cis-1,2-Dichloroethene	86	70
Trichloroethene	32	5

GP-106

Depth 12-16 feet	Result	TL
cis-1,2-Dichloroethene	250	70
Tetrachloroethene	18	5
Trichloroethene	260	5
Depth 16-20 feet		
cis-1,2-Dichloroethene	160	70
Tetrachloroethene	36	5
Trichloroethene	170	5

SB-253

Depth 20-22 feet	Result	TL
Trichloroethene	9.6	5

SB-134

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	960	70
Tetrachloroethene	760	5
Trichloroethene	680	5

SW-007R/SW-008R

Depth 5-6 feet	Result	TL
Tetrachloroethene	11	5
Trichloroethene	5.9	5
Depth 4-5 feet		
Tetrachloroethene	110	5
Trichloroethene	32	5

SB-135

Depth 10-20 feet	Result	TL
cis-1,2-Dichloroethene	410	70
Trichloroethene	340	5

SU-001

Depth 0-5 feet	Result	TL
cis-1,2-Dichloroethene	82	70
Tetrachloroethene	280	5
Trichloroethene	83	5

SB-125 SB-265 PZ-17A SB-126 PZ-17C MW-17S MW-17D PZ-17B SB-243A SB-243B SB-267 SB-232A SB-265 SB-127 PZ-17 GP-099 GP-100 GP-101 POND 4 SW-003R SB-268 SB-241 PZ-18B PZ-18C MW-18S SB-237 SB-128 SB-232B PZ-18A SB-129 PZ-18D SB-420 SB-419 SB-462 SB-462A MW-28S SB-509 ORCHARD AV SB-417 SB-130A GP-103 SB-416 SB-244B SB-131 SW-001 SB-233A CHARLOTTE ST SB-444 SB-415 SB-443 PZ-10/SB-510 PARKING SB-132 SB-273 SB-133 SB-134 SB-132A SB-253 SB-245C FP PZ-1 SB-272 GP-106 SB-445 SB-448 SB-135 SB-245A SB-259 PZ-11 SW-007R/SW-008R SB-136 SU-001 PARKING LOT 12 SB-137 MW-31D MW-31S PARKI

LEGEND

Analytical results in micrograms per liter

Sample Depth Interval

MW-18S

Depth 14-24 feet	Date	Result	TL
cis-1,2-Dichloroethene	02/00	19,000	70
cis-1,2-Dichloroethene	02/00	16,000	70
Vinyl Chloride	03/00	5,100	2
Vinyl Chloride	03/00	4,000	2

Compound; Sample Date; Analytical Result; Unrestricted Use Target Limit

- Building Geotechnical Borings
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Perimeter Piezometers
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite CPT Borings
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location
- Site Condition Assessment Areas
- 2000 Property Boundary

N

75 0 75 150 Feet

Figure B-21
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater
for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

CH2MHILL

\\HERCULES\proj\hoover\gis\hvr_offsite\l_maps-part02.apr (Fig. B-21 - Site A_Offsite TL_VOC TL Exceed in GW (11x17 layout).PDF) 27 Sep 2001 18:19 MPETERSH\MKE

SB-130

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene (PAH)	45,000	900
Benzo(a)Pyrene (PAH)	40,000	330
Benzo(b)Fluoranthene (PAH)	34,000	900
Benzo(g,h,i)Perylene (PAH)	25,000	330
Benzo(k)Fluoranthene (PAH)	31,000	9,000
Indeno(1,2,3-c,d)Pyrene (PAH)	25,000	900
Phenanthrene (PAH)	63,000	330
Depth 4-6 feet		
Benzo(a)Anthracene (PAH)	4,500	900

SB-128

Depth 4-6 feet	Result	TL
2-Methylnaphthalene	640	330
PCB-1260	81	33

SB-419

Depth 0-1 feet	Result	TL
PCB-1248	270	33

SB-462

Depth 0-2 feet	Result	TL
PCB-1248	480	33
Depth 2-4 feet	**Result**	**TL**
PCB-1248	17,000	33
Bis(2-ethylhexyl)Phthalate	400,000	214,000

SB-462A

Depth 4-6 feet	Result	TL
PCB-1248	7,100	33
Depth 6-8 feet	**Result**	**TL**
PCB-1248	540	33

SB-417

Depth 3-5 feet	Result	TL
Benzo(a)Pyrene (PAH)	530	330
Benzo(g,h,i)Perylene (PAH)	340	330
Depth 5-7 feet		
Benzo(a)Anthracene (PAH)	1,000	900
Benzo(a)Pyrene (PAH)	750	330
Benzo(g,h,i)Perylene (PAH)	360	330
Phenanthrene (PAH)	650	330

SB-444

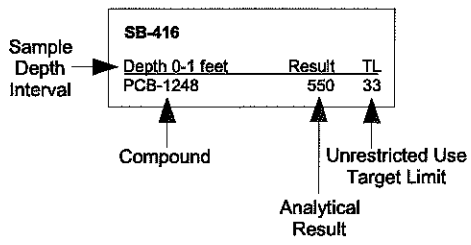
Depth 6-8 feet	Result	TL
Benzo(a)Pyrene (PAH)	6,800	330
Benzo(b)Fluoranthene (PAH)	8,000	900
Benzo(g,h,i)Perylene (PAH)	3,300	330
Indeno(1,2,3-c,d)Pyrene (PAH)	3,300	900
Phenanthrene (PAH)	11,000	330

SB-132

Depth 0-2 feet	Result	TL
Benzo(a)Pyrene (PAH)	490	330
Phenanthrene (PAH)	530	330
Depth 4-6 feet		
Benzo(a)Anthracene (PAH)	2,800	900
Benzo(a)Pyrene (PAH)	2,400	330
Benzo(b)Fluoranthene (PAH)	3,100	900
Benzo(g,h,i)Perylene (PAH)	1,200	330
Indeno(1,2,3-c,d)Pyrene (PAH)	1,400	900
Phenanthrene (PAH)	4,400	330

LEGEND

Analytical results in micrograms per kilogram



- Building Geotechnical Borings
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Perimeter Piezometers
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite CPT Borings
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location
- Site Condition Assessment Areas
- 2000 Property Boundary

N

75 0 75 150 Feet

Figure B-22
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), and Polychlorinated Biphenyl (PCB) Target Limit Exceedances in Soil for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

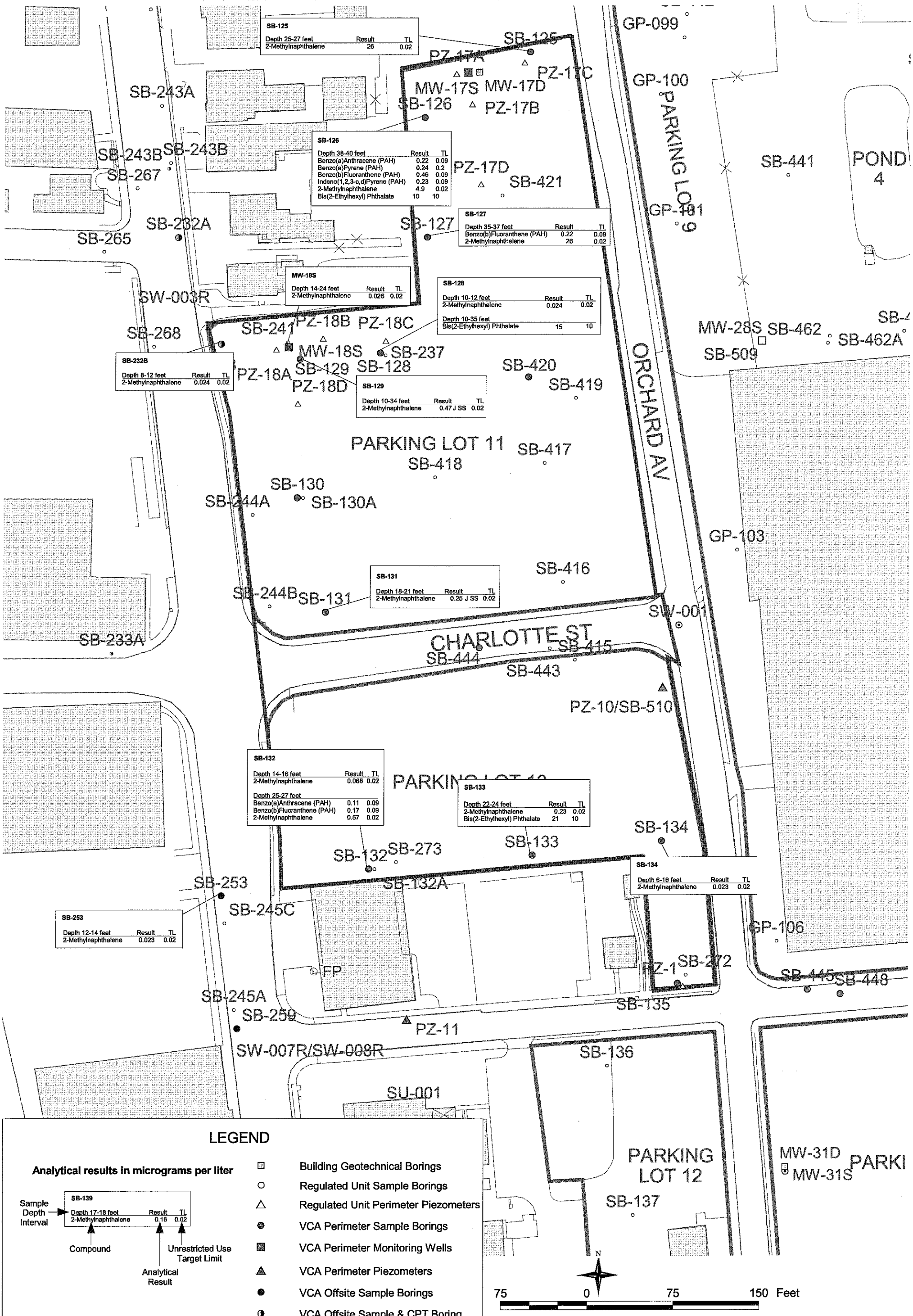


Figure B-23
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), Target Limit Exceedances in Groundwater for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

CH2MHILL

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part02.apr (Fig. B-23 - Site A_Offsite TL_SVOC & PAH TL Exceed in GW (11x17 layout).PDF) 27 Sep 2001 19:26 MPETERSH\MKE

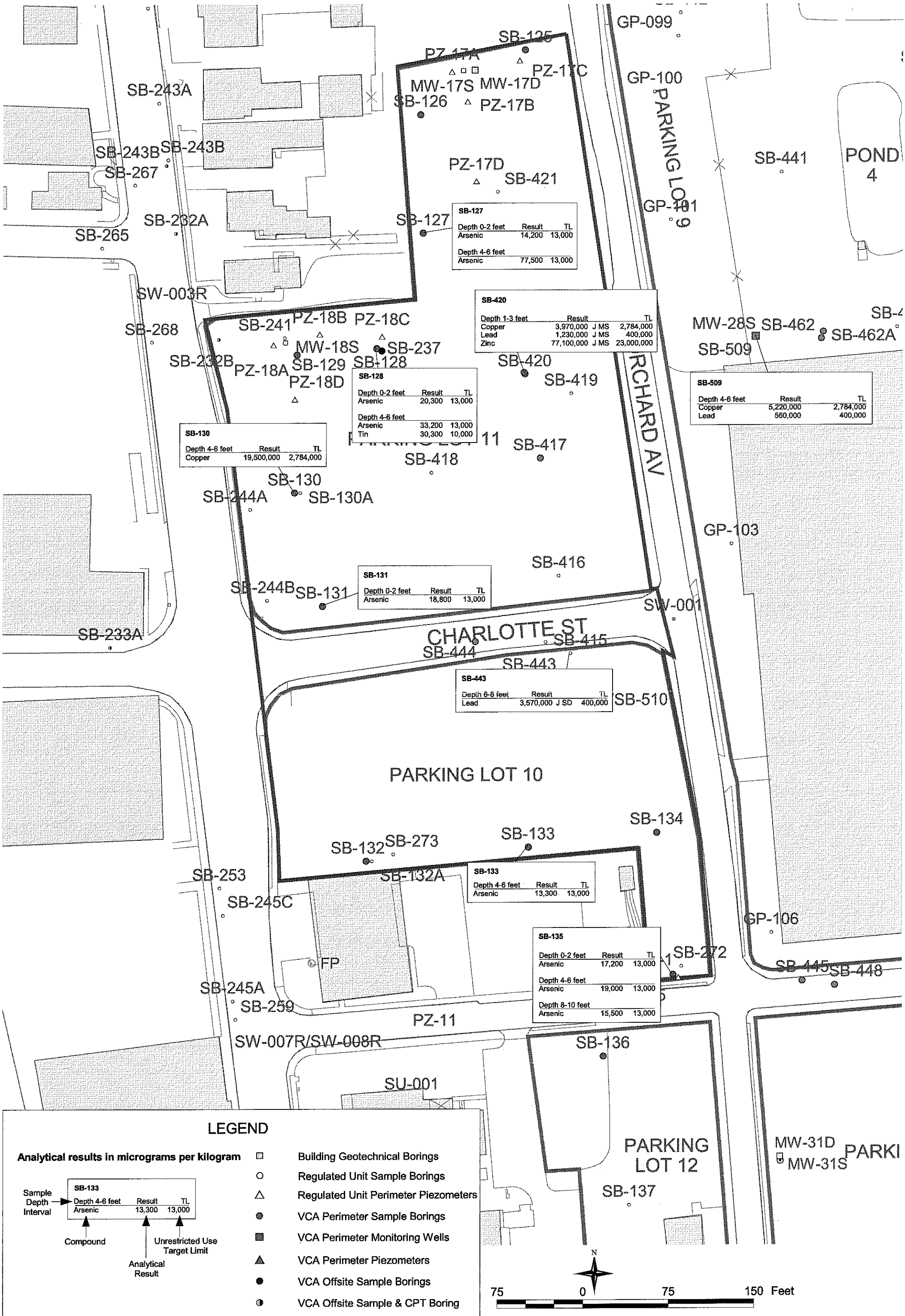
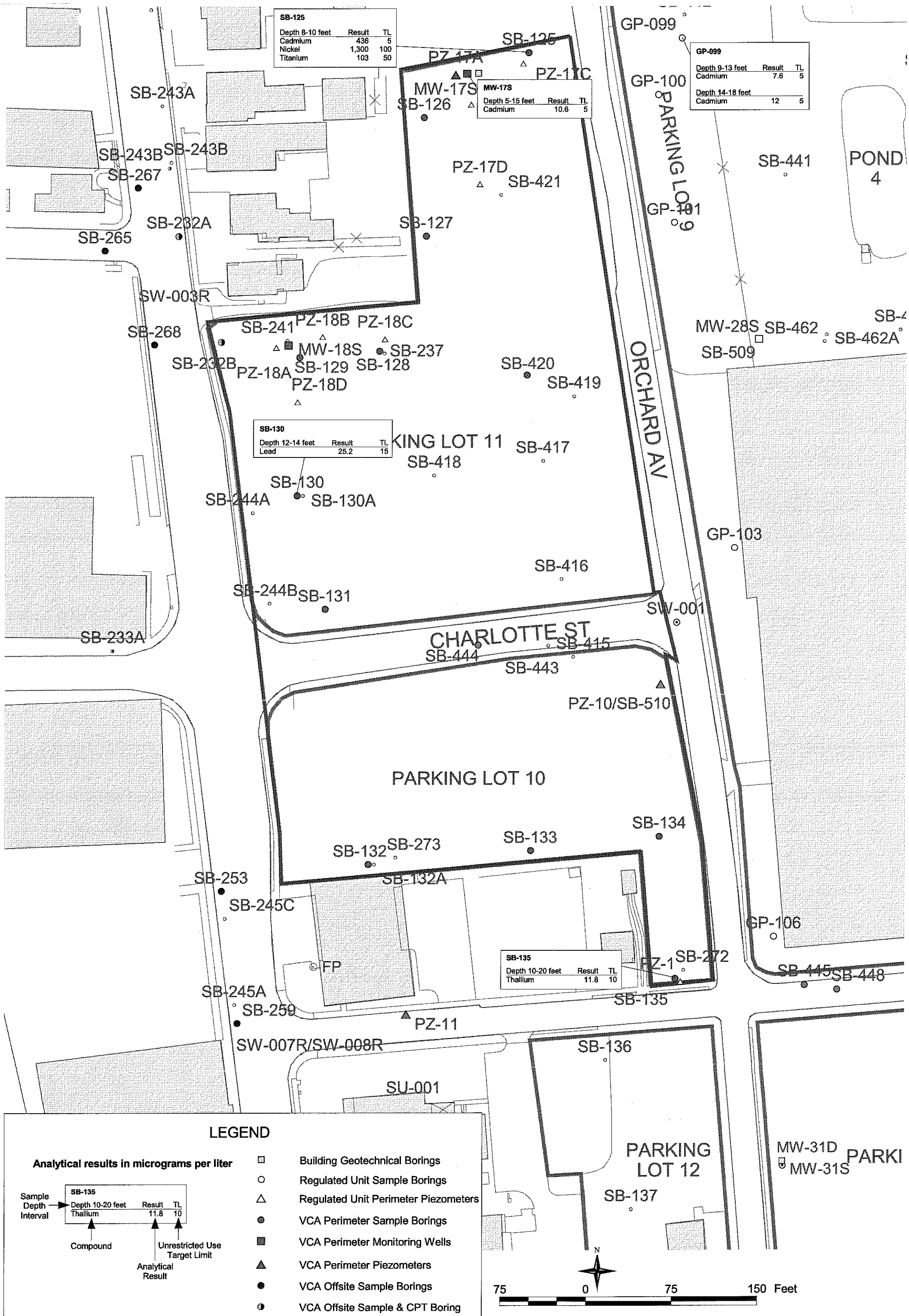


Figure B-24
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

CH2MHILL

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part02.apr (Fig. B-24 - Site A_Offsite TL_TotMet Tl. Exceed in Soil (11x17 layout).PDF) 27 Sep 2001 19:04 MPETERSH\MKE



LEGEND

Analytical results in micrograms per liter

Sample Depth Interval → SB-135 | Depth 10-20 feet | Result | TL | Thallium | 11.8 | 10

Compound; Analytical Result; Unrestricted Use Target Limit

- Building Geotechnical Borings
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Perimeter Piezometers
- VCA Offsite Sample Borings
- VCA Offsite Sample & CPT Boring
- VCA Offsite CPT Borings
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location

Site Condition Assessment Areas

2000 Property Boundary

Figure B-25
Appendix B
Dissolved Metals Target Limit Exceedances in Groundwater for Unrestricted Use
Site A Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

SB-253

Depth 20-22 feet	Result	TL
ethene	9.6	5

SB-132

Depth 14-16 feet	Result	TL
Tetrachloroethene	15	5
Trichloroethene	30	5
Depth 25-27 feet		
cis-1,2-Dichloroethene	86	70
Trichloroethene	32	5

SB-133

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	320	70
Tetrachloroethene	190	5
Trichloroethene	350	5
Depth 22-24 feet		
cis-1,2-Dichloroethene	180	70
Tetrachloroethene	21	5
Trichloroethene	88	5

SB-134

Depth 6-16 feet	Result	TL
cis-1,2-Dichloroethene	960	70
Tetrachloroethene	760	5
Trichloroethene	680	5

GP-106

Depth 12-16 feet	Result	TL
cis-1,2-Dichloroethene	250	70
Tetrachloroethene	18	5
Trichloroethene	260	5
Depth 16-20 feet		
cis-1,2-Dichloroethene	160	70
Tetrachloroethene	36	5
Trichloroethene	170	5

SB-135

Depth 10-20 feet	Result	TL
cis-1,2-Dichloroethene	410	70
Trichloroethene	340	5

SB-507

Depth 13-18 feet	Result	TL
cis-1,2-Dichloroethene	2,700	70
Tetrachloroethene	310	5
Trichloroethene	5,000	5

SB-537

Depth 15-20 feet	Result	TL
cis-1,2-Dichloroethene	210	70
Tetrachloroethene	68	5

SW-007R/SW-008R

Depth 5-6 feet	Result	TL
Tetrachloroethene	11	5
Trichloroethene	5.9	5
Depth 4-5 feet		
cis-1,2-Dichloroethene	110	5
Trichloroethene	32	5

SU-001

Depth 0-5 feet	Result	TL
cis-1,2-Dichloroethene	82	70
Tetrachloroethene	280	5
Trichloroethene	83	5

MW-31S

Depth 12-22 feet	Result	TL
Trichloroethene	63	5
Tetrachloroethene	310	5

SB-170 SB-169 SB-168 SB-167 SB-166 SB-165 SB-164 SB-163 SB-162 SB-161 SB-160 SB-464 SB-543 SB-508 SB-507 SB-447 SB-446 SB-445 SB-448 SB-273 SB-133 SB-132 SB-132A SB-253 SB-245C SB-245A SB-259 SB-245B SB-134 SB-135 SB-136 SB-138 SB-139 SB-140 SB-537 SB-106 PZ-1 PZ-11/SB-512 PZ-7 SW-007R/SW-008R SU-001 MW-31D MW-31S MW-01 MW-02 MW-04 MW-22D B-15A B-15C B-15 B-1 SB-05 SB-19 SB-20 GP-014 GP-043 GP-075 GP-034 GP-029 GP-071 GP-073 GP-033 GP-030 GP-072 GP-063 GP-032 GP-070 GP-064 GP-031 GP-069 GP-065 GP-066 GP-068 GP-067

GATE GATE

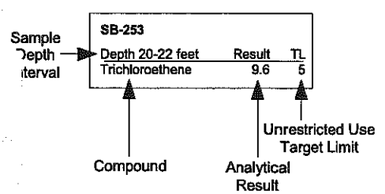
PARKING LOT 6 PARKING LOTS 4 & 5 PARKING LOT 8

HOOVER ST WITWER ST PARK AV TAFT AV

HEADQUARTERS AND MAIN PLANT AREA

LEGEND

Analytical results in micrograms per liter



- Site Condition Assessment Areas
- 2000 Property Boundary
- Building Geotechnical Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample Borings
- VCA Offsite CPT Borings
- VCA Offsite Monitoring Wells
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location

N

100 0 100 200 Feet

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsite\tl_maps-part02.apr (Fig. B-26 - Middle Lots_Offsite TL_VOC TL Exceed in GW (11x17 layout).PDF) 18 Jan 2002 14:51 MPETERSH\MKE

Figure B-26
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater
for Unrestricted Use
Middle Lots Focus Area
The Hoover Company, North Canton, Ohio

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PARKING LOT 10

PARKING LOT 6

PARKING LOT 12

PARKING LOTS 4 & 5

PARKING LOT 8

HEADQUARTERS AND MAIN PLANT AREA

HOWER ST

WITWER ST

PARK AV

TAFT AV

GATE

GATE

SB-132

Depth 0-2 feet	Result	TL
Benzo(a)Pyrene	490	330
Phenanthrene	530	330
Depth 4-6 feet		
Benzo(a)Anthracene	2,800	900
Benzo(a)Pyrene	2,400	330
Benzo(b)Fluoranthene	3,100	900
Benzo(g,h,i)Perylene	1,200	330
Indeno(1,2,3-c,d)Pyrene	1,400	900
Phenanthrene	4,400	330

SB-165

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene	1,100	900
Benzo(a)Pyrene	950	330
Benzo(b)Fluoranthene	1,400	900
Phenanthrene	1,100	330

LEGEND

nalytical results in micrograms per kilogram

Sample Depth Interval

SB-165

Depth 0-2 feet	Result	TL
Benzo(a)Anthracene	1,100	900
Benzo(a)Pyrene	950	330
Benzo(b)Fluoranthene	1,400	900
Phenanthrene	1,100	330

Compound

Analytical Result

Unrestricted Use Target Limit

Site Condition Assessment Areas

2000 Property Boundary

Building Geotechnical Borings

Regulated Unit Monitoring Wells

Regulated Unit Sample Borings

Regulated Unit Perimeter Piezometers

VCA Perimeter Sample Borings

VCA Perimeter Monitoring Wells

VCA Offsite Sample Borings

VCA Offsite CPT Borings

VCA Offsite Monitoring Wells

VCA Onsite Boring

VCA Storm Sewer Sampling Location

N

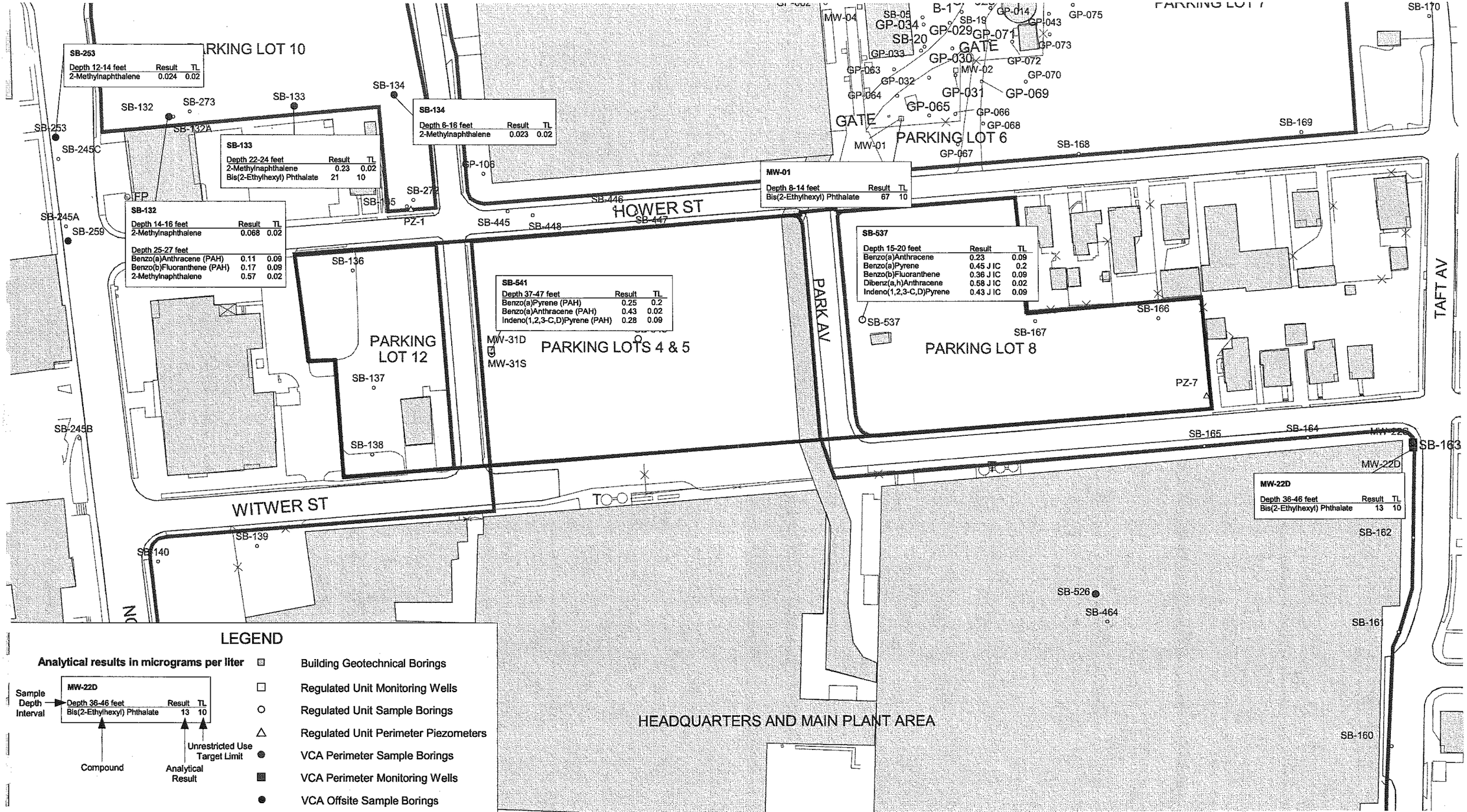
100 0 100 200 Feet

Figure B-27
Appendix B
Polycyclic Aromatic Compound (PAH) Target Limit Exceedances in Soil
for Unrestricted Use
Middle Lots Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part02.apr (Fig. B-27 - Middle Lots_Offsite TL_PAH TL Exceed in Soil (11x17 layout).PDF) 18 Jan 2002 9:47 MPETERSH\MKE



LEGEND

Analytical results in micrograms per liter

Sample Depth Interval → MW-22D | Depth 36-46 feet | Result | TL | Bis(2-Ethylhexyl) Phthalate | 13 | 10

Compound | Analytical Result | Unrestricted Use Target Limit

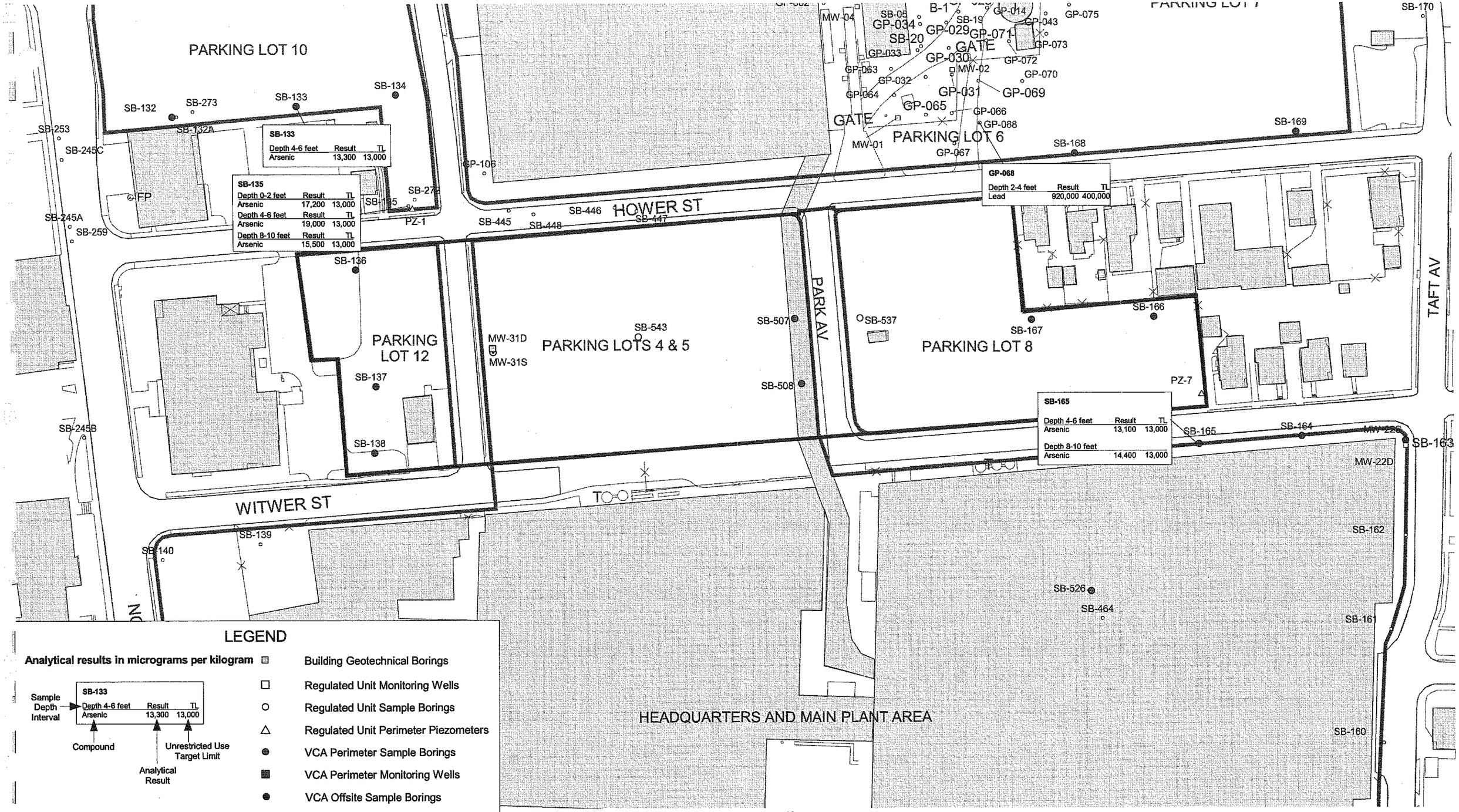
- Building Geotechnical Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample Borings
- VCA Offsite CPT Borings
- VCA Offsite Monitoring Wells
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location
- Site Condition Assessment Areas
- 2000 Property Boundary

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part02.apr (Fig. B-28 - Middle Lots_Offsite TL_SVOC & PAH TL Exceed in GW (11x17 layout).PDF) 05 Oct 2001 11:18 MPETERSH\MKE

Figure B-28
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Compound (PAH), Target Limit Exceedances in Groundwater for Unrestricted Use
Middle Lots Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

- Building Geotechnical Borings
- Regulated Unit Monitoring Wells
- Regulated Unit Sample Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample Borings
- VCA Offsite CPT Borings
- VCA Offsite Monitoring Wells
- VCA Onsite Boring
- VCA Storm Sewer Sampling Location
- Site Condition Assessment Areas
- 2000 Property Boundary

N

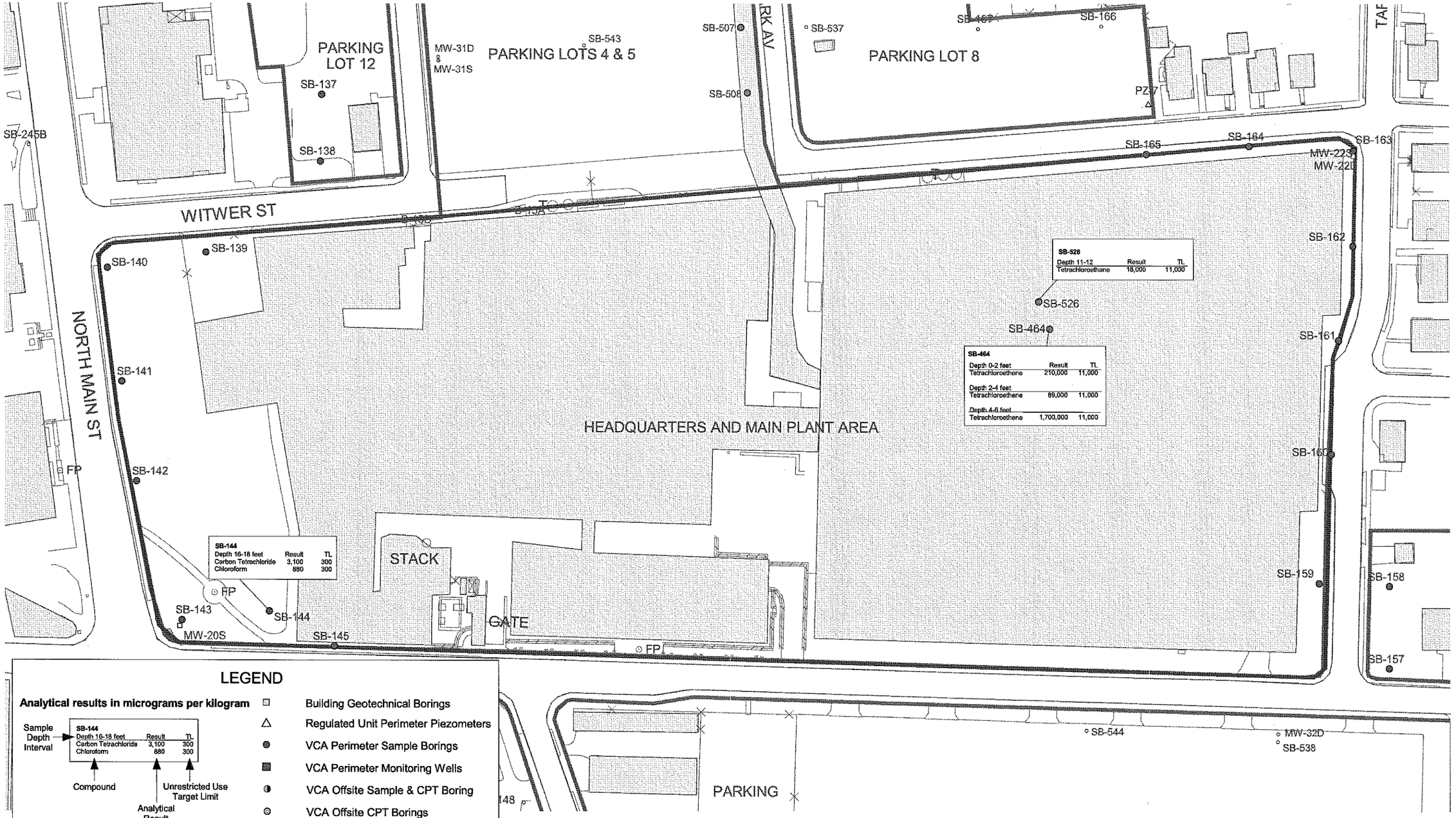
100 0 100 200 Feet

Figure B-29
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Middle Lots Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsite_maps-part02.apr (Fig. B-29 - Middle Lots_Offsite TL_TotMet TL Exceed in Soil_ (11x17 layout).PDF) 05 Oct 2001 12:21 MPETERSH\MKE

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

Sample Depth Interval

SB-144
Depth 16-18 feet Result TL
Carbon Tetrachloride 3,100 300
Chloroform 880 300

Compound

Analytical Result

Unrestricted Use Target Limit

- Building Geotechnical Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample & CPT Boring
- VCA Offsite CPT Borings
- VCA Onsite Boring
- Site Condition Assessment Areas
- 2000 Property Boundary

N

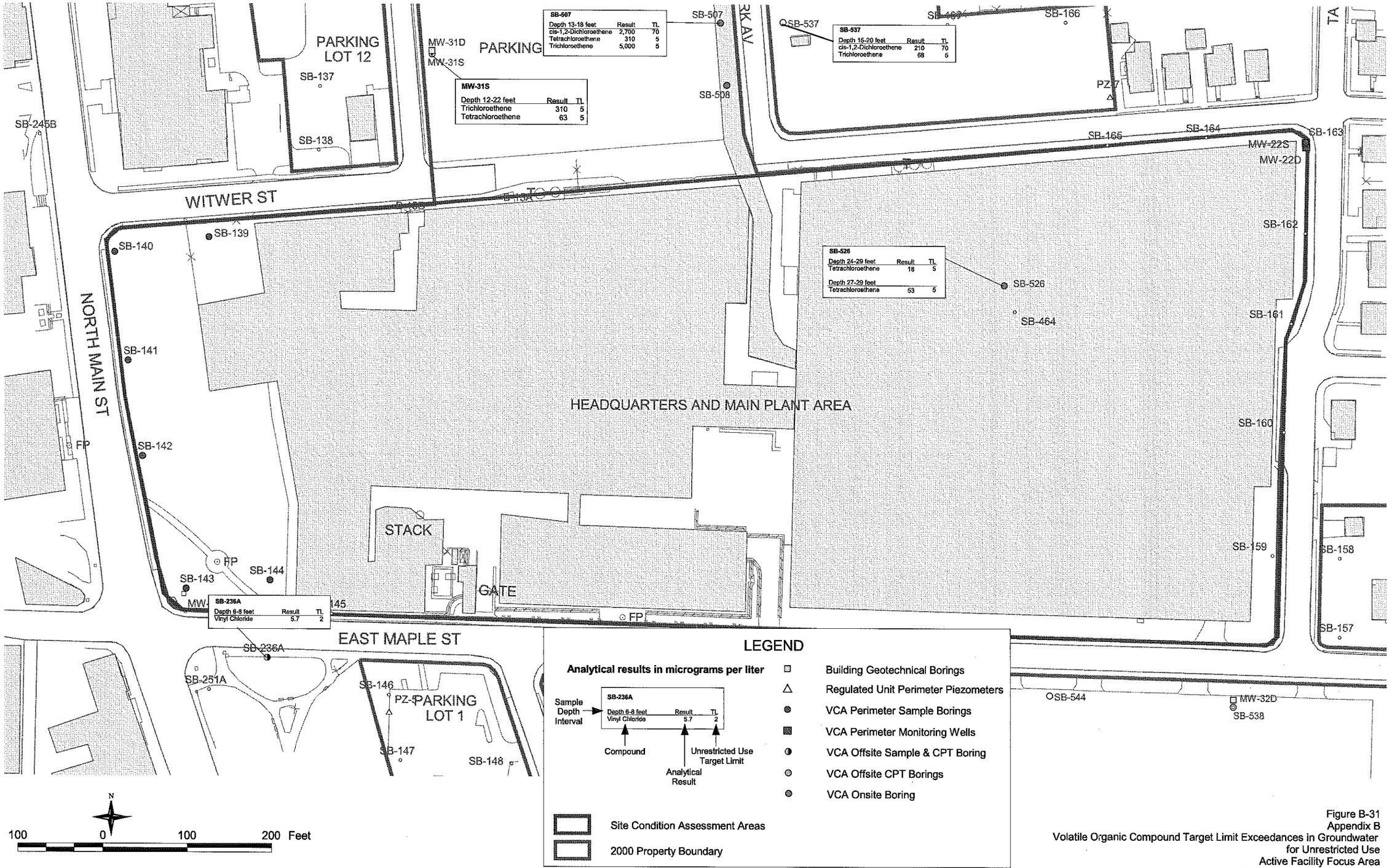
100 0 100 200 Feet

Figure B-30
Appendix B
Volatile Organic Compound Target Limit Exceedances in Soil
for Unrestricted Use
Active Facility Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-30 - Active Facility_Offsite TL_VOC TL Exceed in Soil (11x17 layout).PDF) 05 Oct 2001 14:09 MPETERSH\MKE



NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-31 - Active Facility_Offsite TL_VOC TL Exceed in GW (11x17 layout).PDF) 18 Jan 2002 11:23 MPETERSH\MKE

Figure B-31
Appendix B
Volatile Organic Compound Target Limit Exceedances in Groundwater
for Unrestricted Use
Active Facility Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL

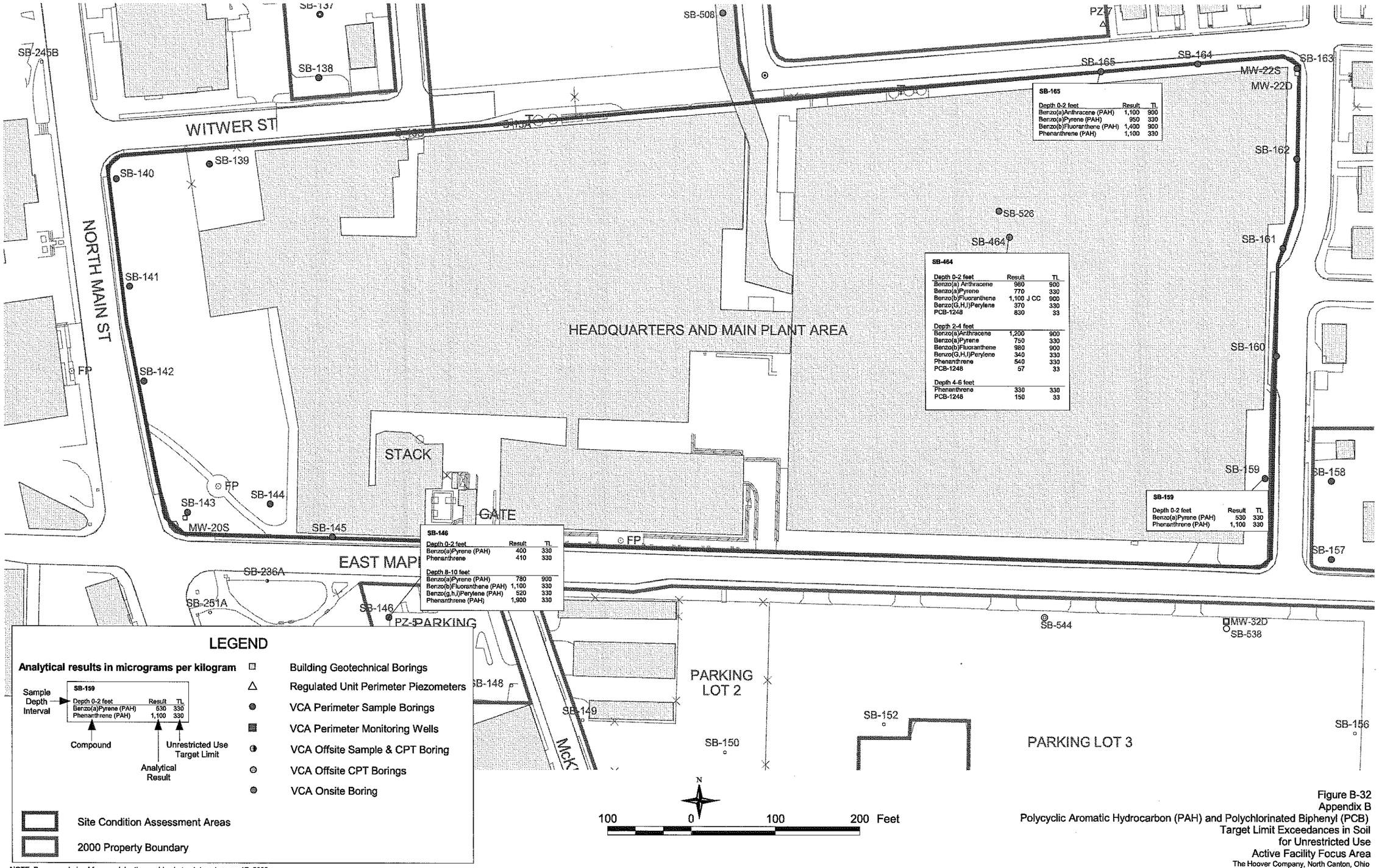


Figure B-32
Appendix B
Polycyclic Aromatic Hydrocarbon (PAH) and Polychlorinated Biphenyl (PCB)
Target Limit Exceedances in Soil
for Unrestricted Use
Active Facility Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

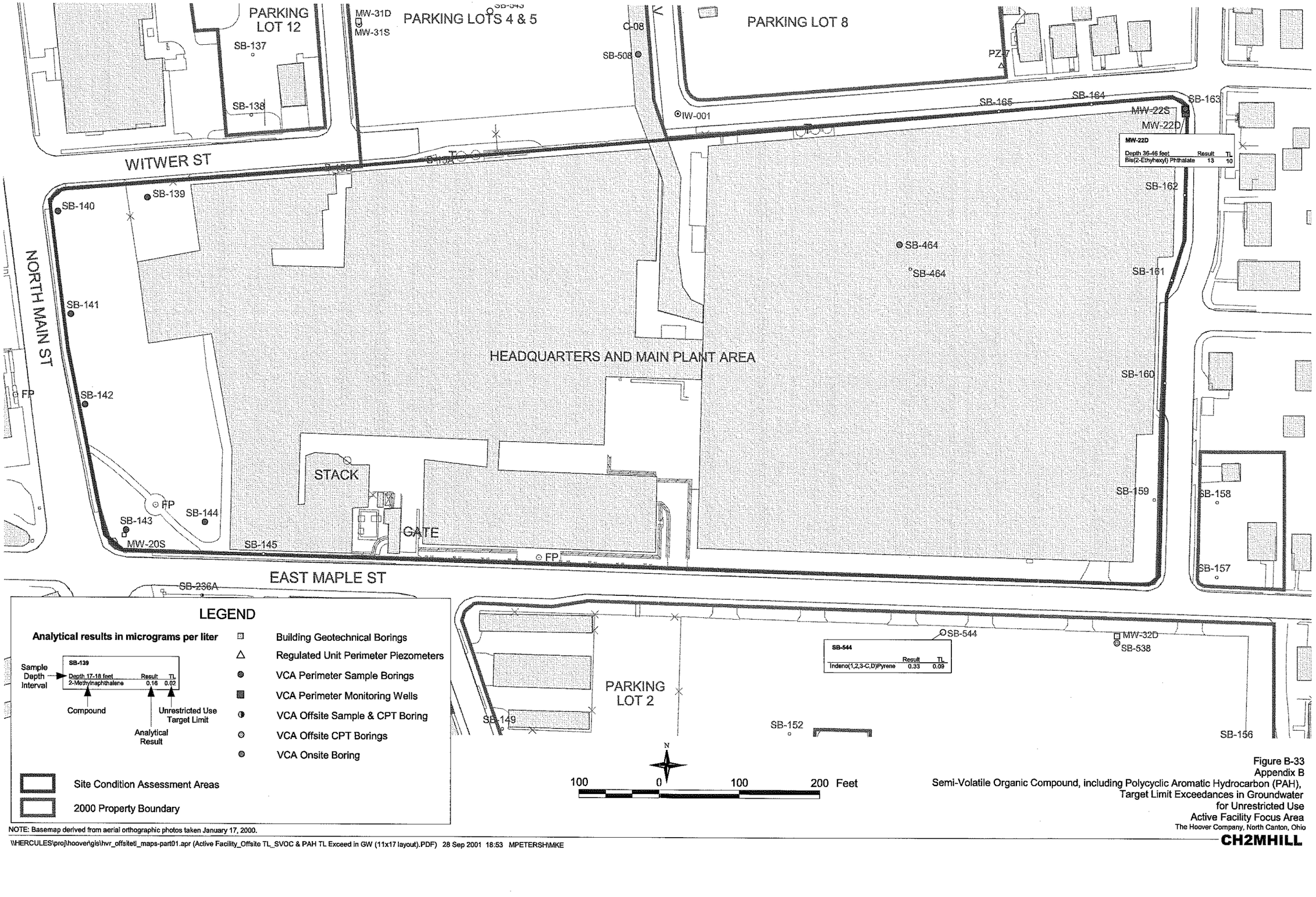
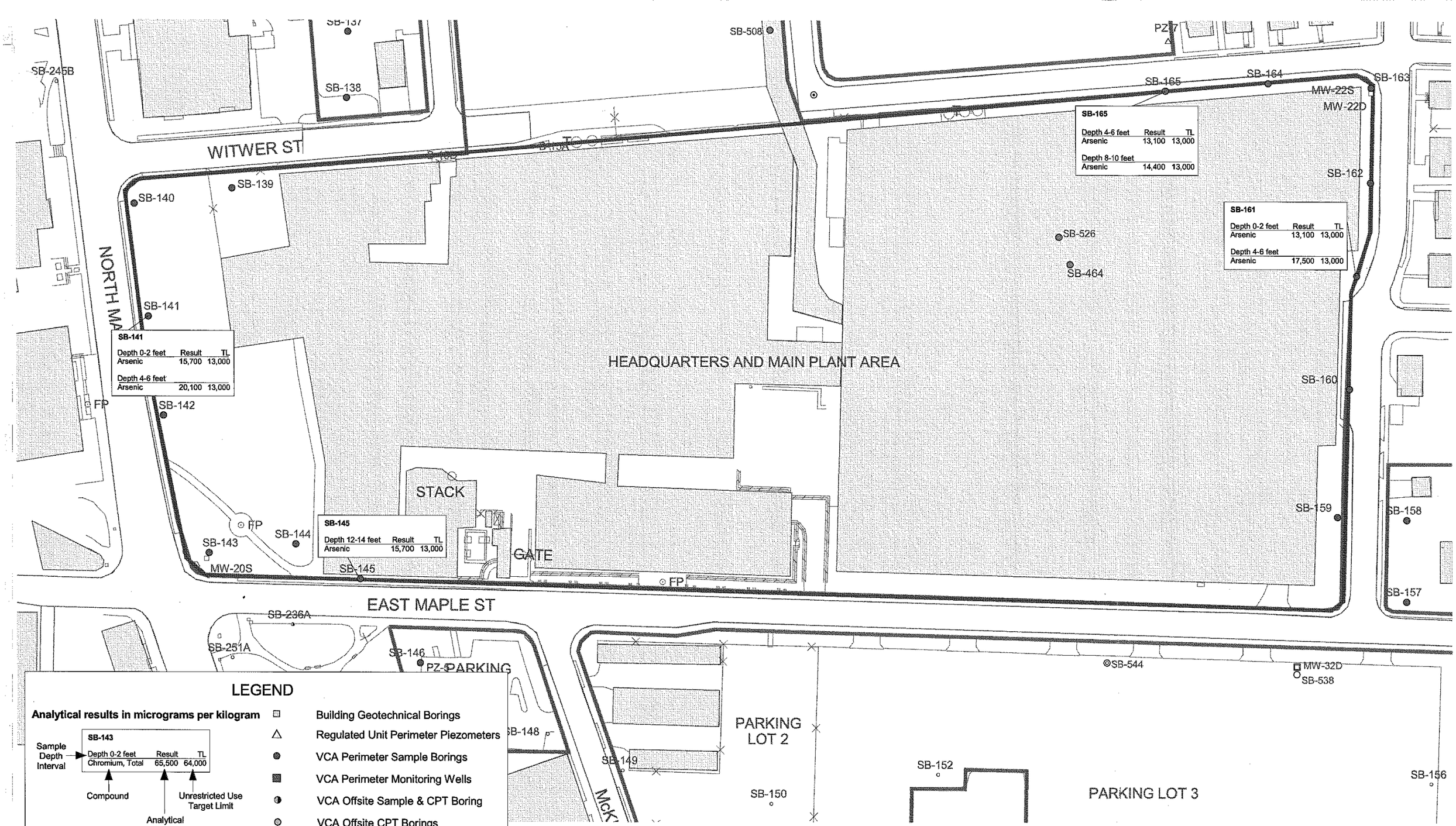


Figure B-33
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), Target Limit Exceedances in Groundwater for Unrestricted Use
Active Facility Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsite_maps-part01.apr (Active Facility_Offsite TL_SVOC & PAH TL Exceed in GW (11x17 layout).PDF) 28 Sep 2001 18:53 MPETERSH\MKE

CH2MHILL



LEGEND

Analytical results in micrograms per kilogram

SB-143
Depth 0-2 feet Result TL
Chromium, Total 65,500 64,000

Sample Depth Interval → Depth 0-2 feet
Compound → Chromium, Total
Analytical Result → 65,500
Unrestricted Use Target Limit → 64,000

- Building Geotechnical Borings
- Regulated Unit Perimeter Piezometers
- VCA Perimeter Sample Borings
- VCA Perimeter Monitoring Wells
- VCA Offsite Sample & CPT Boring
- VCA Offsite CPT Borings
- VCA Onsite Boring

Site Condition Assessment Areas

2000 Property Boundary

N

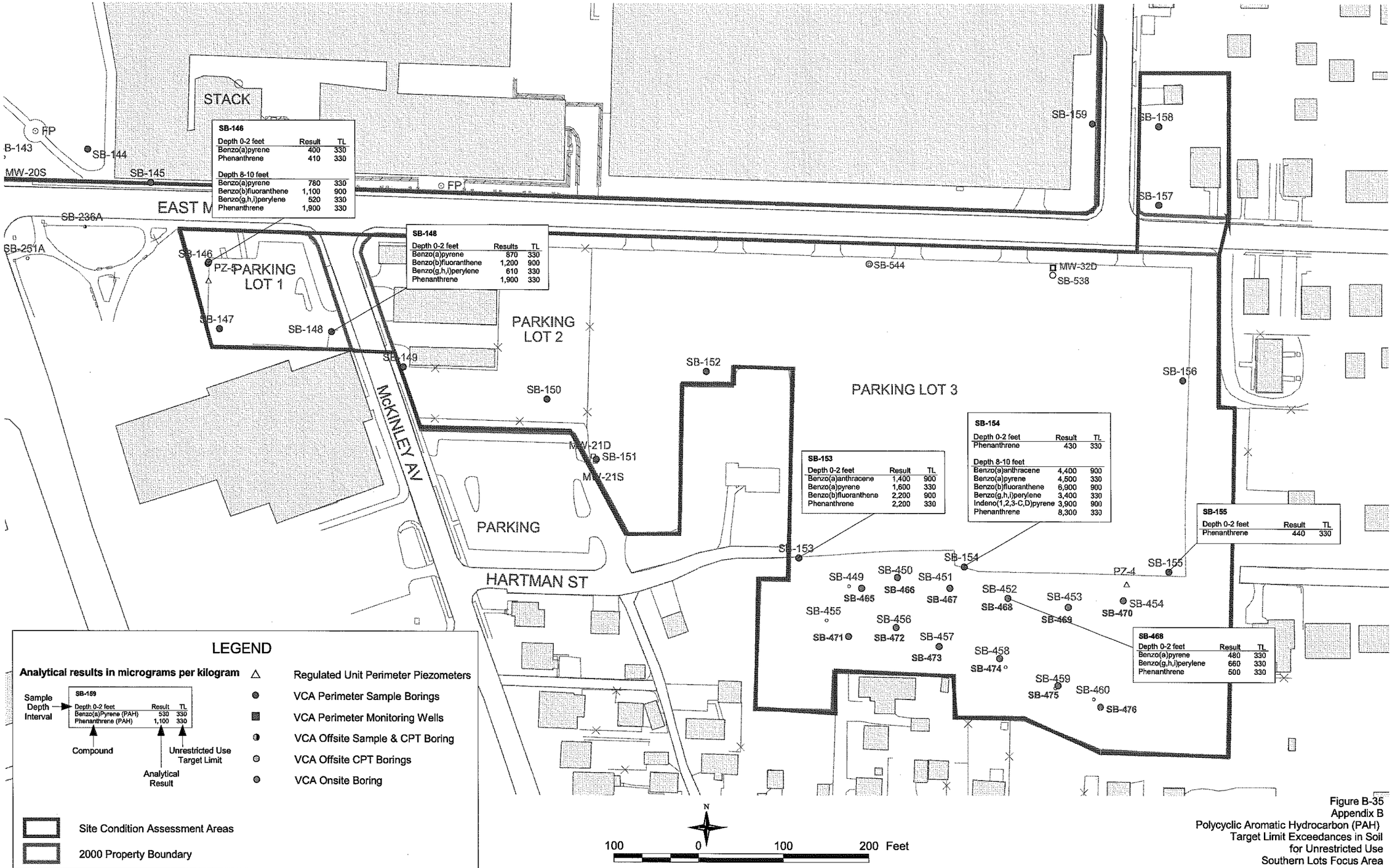
100 0 100 200 Feet

Figure B-34
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Active Facility Focus Area
The Hoover Company, North Canton, Ohio

NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitet_maps-part01.apr (Fig. B-34 - Active Facility_Offsite TL_TotMet TL Exceed in Soil (11x17 layout).PDF) 05 Oct 2001 15:28 MPETERSH\MKE

CH2MHILL

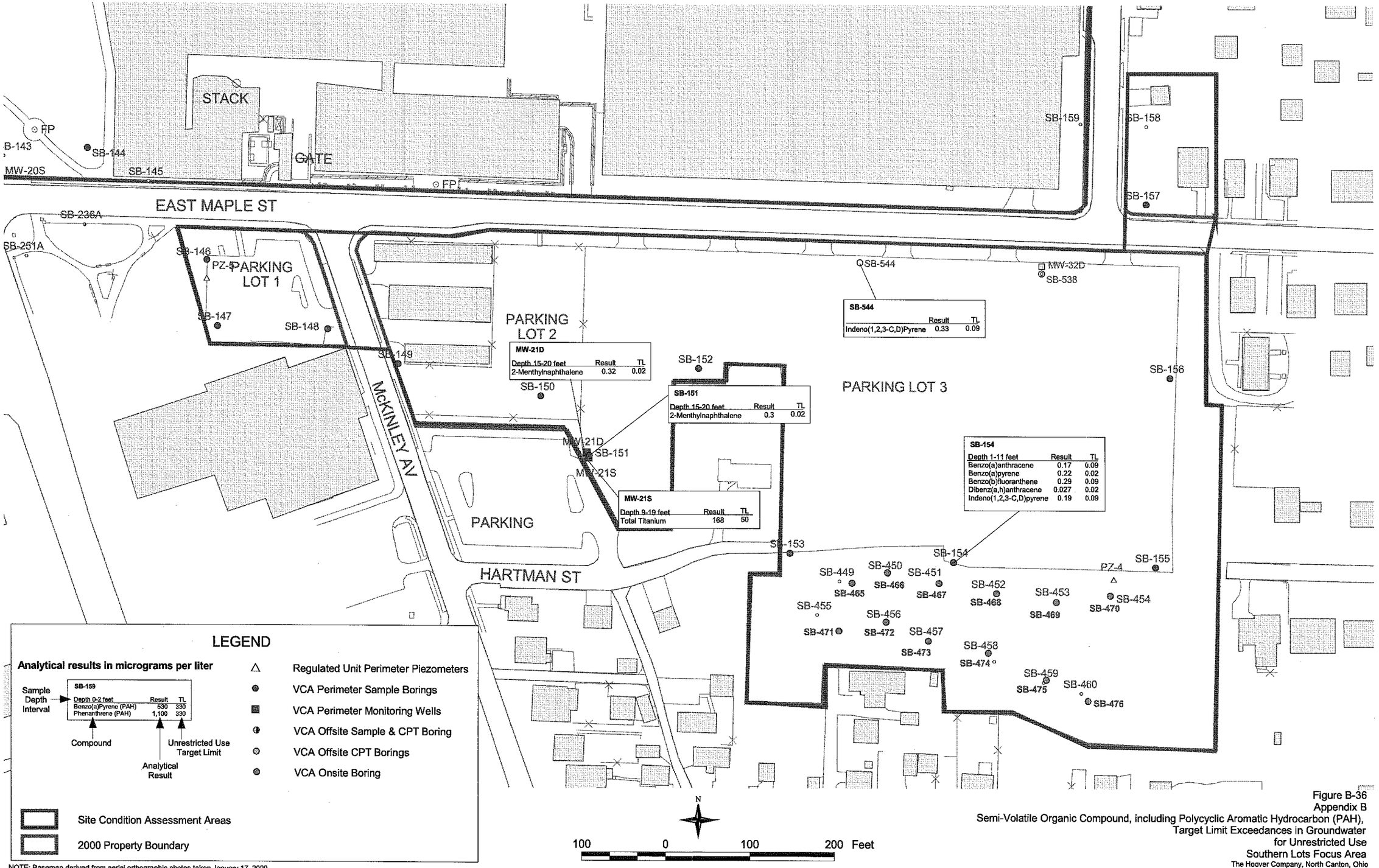


NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-35 - Southern Lots_Offsite TL_PAH TL Exceed in Soil (11x17 layout).PDF) 05 Oct 2001 15:48 MPETERSH\MKE

Figure B-35
Appendix B
Polycyclic Aromatic Hydrocarbon (PAH)
Target Limit Exceedances in Soil
for Unrestricted Use
Southern Lots Focus Area
The Hoover Company, North Canton, Ohio

CH2MHILL



NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-36 - Southern Lots_Offsite TL_SVOC TL Exceed in GW (11x17).PDF) 18 Jan 2002 10:01 MPETERSH\MKE

Figure B-36
Appendix B
Semi-Volatile Organic Compound, including Polycyclic Aromatic Hydrocarbon (PAH), Target Limit Exceedances in Groundwater for Unrestricted Use
Southern Lots Focus Area
The Hoover Company, North Canton, Ohio

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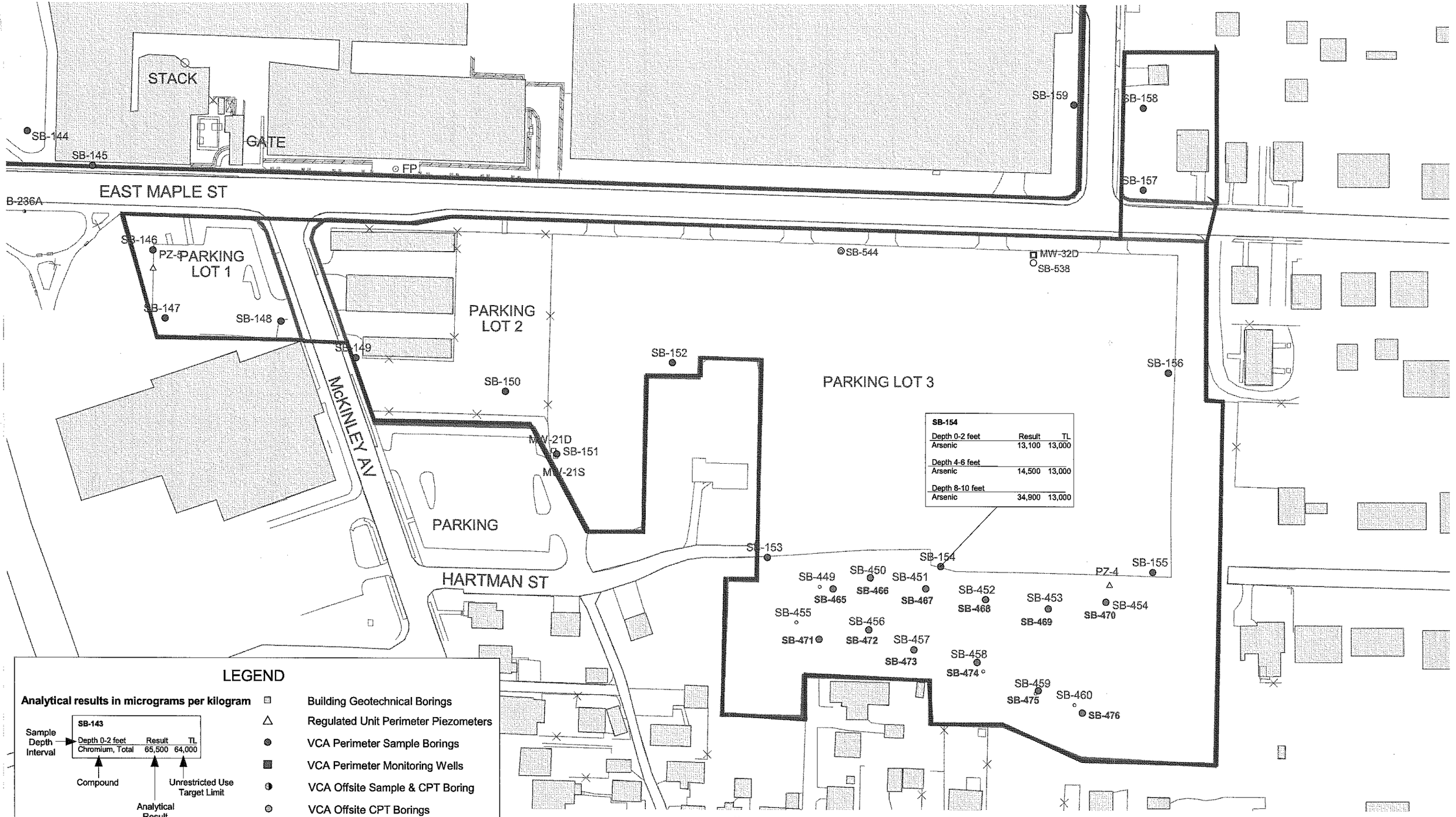

Figure B-37
Appendix B
Total Metals Target Limit Exceedances in Soil
for Unrestricted Use
Southern Lots Focus Area
The Hoover Company, North Canton, Ohio

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NOTE: Basemap derived from aerial orthographic photos taken January 17, 2000.

\\HERCULES\proj\hoover\gis\hvr_offsitetl_maps-part01.apr (Fig. B-37 - Southern Lots_Offsite TL_TotMet TL Exceed in Soil (11x17).PDF) 05 Oct 2001 16:12 MPETERSH\MKE